

PERSONALITY FACTORS AND STRESS RATINGS
OF LIFE CHANGES IN A COLLEGE POPULATION

By
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By

Charles Hermann Morgan, Jr.

To the memory of Charles H. Morgan, M.D.

But those who trust in the LORD for help
will find their strength renewed.
They will rise on wings like eagles.

Isaiah 40:31

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Recent research by Wershow and Reinhart and others has called into question the utility of standard weightings of life change events. Research by Hinkle and others has emphasized the importance of individual differences in the perception of and attachment of meaning to life change events in determining the outcome level of distress experienced by the individual. This research focused on the relationship between three measures of personality factors and ratings assigned to the events of the college-modified form of the Social Readjustment Rating Questionnaire. The personality factors theoretically related to event perception were locus of control of reinforcement, response to threat, and preferred mode of information processing. Locus of control of reinforcement was measured by Rotter's I-E Scale. It was

hypothesized that sensitization would correlate positively with event ratings. Preferred mode of information processing was measured by the Learning Strategies Questionnaire. It was hypothesized that LSQ scores would correlate significantly with event ratings.

In addition, the events were divided into three groups based on judged degree of control of the subject over the occurrence of the event. The groups were subject-controlled, fate-controlled, and unassigned. It was hypothesized that the occurrence of fate-controlled events would threaten an internalizer's belief in internal locus of control in addition to threat of the event itself. Likewise, subject-controlled events would present a double threat to externalizers. It was hypothesized that locus of control would correlate positively with the difference between subject-controlled and fate-controlled event-group sums.

These hypotheses were tested using a survey design with the subjects being 274 undergraduate students enrolled in an introductory psychology course.

Analysis of the data show that fourteen of the forty-six events have ratings which correlate in the expected direction with I-E Scale scores. Twenty-six of the forty-six have ratings correlating in the expected direction with R-S Scale

scores. Twenty-one of the forty-six have ratings correlating with LSQ scores in a positive direction. All three personality factors correlate significantly with the personal average ratings of all forty-six events. These findings confirm the role of locus of control, response to threat, and information processing in determining the stressfulness of the events. However, the personality measure which correlated most with the difference score based on locus of control of the event was the R-S Scale score and not the I-E Scale score.

These results are discussed in relation to current research and in relation to some of the major theoretical models of stress as confirming the role of perception of and attachment of meaning to events in determining the severity of stress. Directions for future research to resolve issues raised by this study were also discussed.

CHAPTER I

INTRODUCTION

The field of life change and its concomitant stress has captured the attention of physicians, psychologists, sociologists, and the lay public alike. There has been a marked increase in the number of books and articles published in scholarly journals dealing with various methods and instruments to quantify the stress, upset, or adjustment caused by changes in the routine life style. Studies have focused on the stressful effects of certain, specified changes as well as of more general life changes. Scales have been developed which assign a quantitative amount of readjustment or upset to each of many different "normal" life changes. Other studies have focused on the breakdown of normal physiological and psychological functioning. Some have looked at specific physiological or psychological effects such as heart disease or depression, whereas others have looked at general incidence of physical or psychological symptoms.

This interest in the potential negative consequences of too much change, too fast has filtered to the lay public.

One of the first books dealing partially with life changes was published in 1970 (Toffler, 1970). Since that time, other books have been published for the popular market proclaiming the need for an individual to experience large amounts of stress in his/her normal life (Selye, 1974; Sheehy, 1977). Lay interest in life changes is best evidenced by Ms. Sheehy's book, Passages, which is subtitled Predictable Crises of Adult Life, and was a national best-seller. Magazine articles have also approached this subject. A recent article in a popular men's magazine began in the following manner: "Sure, you can handle taxes and divorce and muggers and inflation. Problem is, you're carrying around some fatally dumb glands that just can't cope " (Yafa, 1975, 86). Another article presented a self-administered "stress test" to help housewives determine their susceptibility to near-future illness (Davidson, 1976).

Given the intense professional and lay interest in life changes and their effects, it is inevitable that methodological, theoretical, and other research problems arise. The purpose of the present study is to take one problem, that of individual differences in perception and assigning of meaning to life changes, and explore a potential avenue for resolution.

The Problem

With the development of the Social Readjustment Rating Scale (S.R.R.S.) (Holmes & Rahe, 1967) a new era of quantitative stress research began. Working from different institutions, various groups of researchers have explored the relationship of life change units to various indicators of physical and/or mental illness. One of the most prolific investigators is Richard Rahe, co-author of the original S.R.R.S. Working from his position as a Commander in the Biochemical Correlates Division of the U.S. Navy Neuropsychiatric Research Unit in San Diego, California, he has conducted study after study on the effects of life changes on the health patterns of thousands of U.S. Navy personnel. In association with other researchers, he has investigated the life change-illness relationship in Sweden, Denmark, and other countries.

While Dr. Rahe's focus has been on physical illness, Eugene Paykel and his associates have concerned themselves more with depression and other psychological/psychiatric maladies.

Numerous studies have shown clear and statistically significant correlations between scores on the S.R.R.S. (or Paykel's scale (Paykel, Prusoff, & Uhlenhuth, 1971)) and symptom reports, aid seeking, hospitalizations, and

illness of all kinds. However, while the correlations between life change unit (LCU) scores and illness are positive and significant, they all fall in the range of .12 -.15. Correlations this low are not useful because they can, at best, account for 2 or 3% of the variance of the dependent measure. These results have led some writers to question seriously the validity of the S.R.R.S. (Bieliauskas & Webb, 1974; Wershow & Reinhart, 1974; Hough, Fairbank, & Garcia, 1976; Caplan, 1975).

In an attempt to improve prediction from the LCU scores to the need for physical and/or psychological aid, investigators recently have begun to look at the desirability of the change and at personality factors. A recent article (Vinokur & Selzer, 1975) concludes that the desirability of an event has a crucial influence on the stress produced by it. Their study found that the relationship between changes and illness held for undesirable events, but did not hold for desirable ones. Another recent study (Manack, Hinrickson, & Ross, 1975) reports differences in the relationship between life change and illness across the personality variable of locus of control.

The present study will attempt to clarify further the issue of individual differences in perception of life change events and therefore, inferentially, in response to them. Three aspects of "personality" will be assessed and related,

theoretically and statistically, to ratings given to life change events meaningful to a college population. The first of these is a general attitude or orientation to the world, locus of control. Rotter's (1966) scale focuses on the degree of control over his/her own life a person feels she/he has. Whether an individual considers him/herself a meaningful causal agent in shaping his/her life is hypothesized to have an influence on how she/he perceives and attaches meaning to "normal" life changes.

A second personality factor hypothesized to influence perception and rating of life change events is one of response to threat. While not all life changes are threatening, they do make additional demands for adjustment (or coping) on the individual. In the sense that demands can, and are by some, seen as threats to the status quo, repression or sensitization as measured by Byrne's (1964) scale should also influence perception of events.

Following the occurrence of the life change, the individual needs to gather and process information relevant to his readjustment. The Learning Strategies Questionnaire (LSQ) (Kagan, Krathwohl, Goldberg, Campbell, Schauble, Greenberg, Danish, Resnikoff, Bowes, & Bondy, 1967) assesses the primary mode of information gathering. "Focusing" involves a search for bits of information and a collection of detailed facts, whereas "scanning" involves

a more integrative approach to constructing a coherent, organized view of the material. It is hypothesized that primary mode of information gathering (learning strategy) will influence how stressful or upsetting people consider certain life changes to be.

CHAPTER II

LITERATURE REVIEW

This review is organized into six sections dealing with research and theory of life change stress and with the specific theoretical and research underpinnings of this study. The first section will discuss the early history of the stress concept and the earliest research. A second section will discuss the attempt of Holmes and Rahe and Paykel to quantify the degree of stress associated with specific life changes. The third section will very briefly review research with those instruments and the problems which have arisen. Following this, a section will present briefly the theories of a number of writers and the organizing concept of demand. A fifth section will present the personality factors used in this study and the rationale for their use. The chapter will conclude with a statement of the hypotheses of this particular study.

History and Early Research

Early research and theorizing into the area of physical and psychological reactions to life change stressors began with the work of Cannon (1929). Cannon succeeded in building a theory of emotion around data which linked the occurrences of an emotionally charged environmental event to physiological arousal. Although his work concentrated on determining discrete changes in bodily function associated with the specific emotional states of fear, anger, and anxiety, the extension to emotional states caused primarily by life changes can readily be made.

Later, Adolf Meyer (Leif, 1948), following a Freudian tradition of looking for childhood antecedents of adult psychopathology, modified by long and rich clinical experience, developed a "life chart." The chart was an overt recognition of the role of stressful life events, including life changes, in the development, occurrence, and exacerbation of psychosomatic and psychological disorders. The "life chart," gathered in conjunction with clinical interview, structured data on important changes in the life patterns of the patients, thereby aiding in the diagnosis.

The first research dealing directly with the effects of life changes or adverse environmental conditions was conducted in the 1950's by Selye (1956) and Hinkle and

Wolff and their associates (Wolff, 1950; Hinkle, Conger & Wolf, 1950; Wolff, Wolf, & Hare, 1950; Hinkle, Christenson, Kane, Ostfeld, Thetford, & Wolff, 1958; Hinkle & Wolff, 1958). Wolff (1950) discusses the use of short-term visceral protective devices to ward off threat or stress from an external source. However, when these short-term protective devices are used to deal with long-term stressors such as major life changes, the result may be damage of the "protected" structures and collapse of the general devices themselves. Careful studies of people undergoing or having undergone stressful life changes (Hinkle & Wolff, 1958; Hinkle et al., 1958), show that the way a man perceives his life situation and reacts to it, profoundly influence his general state of health. Their evidence indicated that at least one third of all episodes of disease, regardless of nature, location, etiology, and severity, are directly determined or profoundly influenced by the reaction of a person to his/her environmental situation.

While Hinkle, Wolff and their associates were approaching the problem of stressful life changes from an epidemiological viewpoint dealing with broad ranges of illnesses, Selye (1956) was looking much more precisely at the physiological, biochemical reactions of laboratory animals to specific stressors such as immersion in ice water, injection with a toxic substance, and enforced sleeplessness.

As a medical resident, Dr. Selye had noted that many minor physiological and psychological symptoms appeared to be associated not with the occurrence of a specific disease, but rather with the occurrence of any disease. While conducting pharmacological research with laboratory animals, he further noted "standard" changes in physiological/biochemical functioning following injections of rather impure hormone. His book (1956) summarizes and reviews a great deal of his early research with experimental animals which led to the identification of specific glandular and hormonal changes which occur when an organism is stressed.

Selye was able to map a three stage process of adaptation to stress which involves these glandular and hormonal changes. After determining that the cluster of physiological changes occurred in many different animals of different species, across many types of stress, he named the reaction the General Adaptation Syndrome (GAS). Within his theoretical model, which will be discussed more fully below, stress is seen as "essentially the rate of all wear and tear caused by life" (Selye, 1956, p. viii).

The next section will detail the development of scales which attempt to quantify the amount of stress required by specific life changes. Consideration is given to the assumptions underlying the scales as well as their standardization and validation.

Quantifying Life Change Stress

The theorizing and research of men such as Hinkle, Wolff, and Selye, while pioneering, was largely general and descriptive. There was no technology available to allow one to predict specific occurrences of illness in individuals following a certain number of life changes. The development of scales of life changes provided for the quantification of the amount of stress resulting from each of a number of life change events. This technology, developed by Holmes and Rahe (1967) and Paykel and his associates (Paykel et al., 1971), has allowed researchers to conduct intense retrospective and even prospective studies in an attempt to illuminate the relationship between life changes and dysfunction, be it physiological or psychological.

The development, testing, and refinement of the Social Readjustment Rating Scale (S.R.R.S.) are chronicled in a number of articles authored by one of its developers and most heavy users, Richard Rahe (1972, 1974). For the sake of brevity, only a brief description of the development will be given below.

The S.R.R.S., also called the Schedule of Recent Experiences (S.R.E.), began with careful observation of the role of recurring life changes in the readmission to the hospital

of patients suffering from pulmonary tuberculosis (Hawkins, Davies, & Holmes, 1957). In research conducted over five distinct medical syndromes and two control groups, the main factor differentiating the patients who relapsed from those who did not was the temporal pattern of social stresses in the ten years prior to illness onset (Rahe, Meyer, Smith, Kjaer, & Holmes, 1964). In this study, the investigators used the S.R.E., a list of forty-three events found to frequently precede the onset of symptoms. There was, however, no differentiation among the events on any "stressfulness" scale.

Shortly following this study, Holmes and Rahe (1967) had a sample of middle-class normals rate the amount of readjustment required by each event using a ratio-scaling technique. The subjects were instructed that social readjustment as a concept, consists of "amount and duration of change in one's accustomed pattern of life resulting from various life events. As defined, social readjustment measures the intensity and length of time necessary to accommodate to a life event, regardless of the desirability of the event" (p. 213, emphasis in original). Subjects were asked to use their experiences and the experiences of others known to them to derive the average degree of necessary readjustment necessitated by each event. Using the ratio scaling technique developed by Stevens (1966), the authors set the

value of marriage at 500 "life change units." They processed the ratings by calculating the mean for each item and dividing by 10 to yield the S.R.R.S. (Holmes & Rahe, 1967). It is of note that the investigators took care to avoid the influence of desirability in the derivation of "life change unit" (L.C.U.) weights for each event. This issue will be discussed further below.

Other investigators addressed the question of the degree to which ratings of the S.R.R.S. events were culture bound or idiosyncratic to each ethnic group. Early research by Rahe, Holmes, and their associates (Masuda & Holmes, 1967; Komaroff, Masuda, & Holmes, 1968; Rahe, 1969; Harmon, Masuda, & Holmes, 1969; Rahe, Lundberg, Bennett & Theorell, 1971) generated rank order correlations for the ratings for Americans, Japanese, Black Americans, Mexican Americans, Danes, Swedes, and other groups. Much of this research is adroitly summarized by Rahe (1972, 1974) and, for the sake of brevity, will not be repeated here. Suffice it to say, that correlations usually fall within the range from .75 to .98, indicating a high degree of cross-cultural agreement in the rank-ordering of the forty-three events. More recent investigations show highly significant correlations between the ratings of the original Holmes and Rahe (1967) sample and those of New Zealanders (Isherwood & Adam, 1976) and those of Cuban exiles (Valdes & Baxter, 1976).

While widely used and standardized, the S.R.R.S. is not without limitations. Some of the limitations have been discussed by Cochrane and Robertson (1973), Hough and his associates (Hough, Fairbank, & Garcia, 1976), and Rahe himself (1974). These limitations, often relating to the issue of desirability of the event, have led to the development of at least two additional scales of stressful life events.

B.S. Dohrenwend (1973) began with an attempt to incorporate desirability into the S.R.R.S. Using the mediating concepts of gain and loss, Dohrenwend developed a method for incorporating loss events into the L.C.U. total and excluding gain events. This index has been used successfully by Myers and his associates (Myers, Lindenthal, & Pepper, 1974).

A more extensive revision of the S.R.R.S. was undertaken by Paykel and colleagues (Paykel et al., 1971; Paykel & Uhlenhuth, 1972). Whereas Rahe was concerned primarily with somatic manifestations of stress, Paykel and his colleagues were concerned primarily with psychological disorder, especially depression. Paykel, Prusoff, and Ulenhuth (1971) reasoned that most psychological/psychiatric disturbance is related closely to level of perceived distress. Thus, the desirability of a change becomes a very important determinant of overt disorder through its close relationship with degree of perceived distress. They recognize that while desirable

events may necessitate drastic changes in the life routine of an individual, undesirable events usually involve re-adjustment plus an element of threat--especially to the individual's self-esteem (Paykel et al., 1971).

Consequently, Paykel modified some of the items on the original S.R.R.S. to separate desirable from undesirable responses. For example, the S.R.R.S. item dealing with increase or decrease in arguments with spouse was separated. He further reworded or qualified other events leading to a scale of 61 events as opposed to Holmes and Rahe's (1967) 43 events. In order to incorporate desirability into the rating, Paykel asked his subjects to rate each event on the degree of upset produced. The exact instructions were as follows:

Below is a list of events that often happen to people. We would like you to think about each event and decide how upsetting it is. Use your own experience and what you know about other people to make your decision. A particular event might be more upsetting to some people than to others. Try to think how upsetting the event would be to the average person. (Paykel et al., 1971, p. 340)

Unlike Holmes and Rahe's (1967) subjects, Paykel et al.'s (1971) subjects did not have an anchor event. Their subjects were asked rather to rate the degree of upset resultant from each of the 61 events on a scale from 0 to 20. Even though there is a question as to whether such a procedure would generate a ratio scale of units (Stevens,

1966), it produced ratings which were correlated moderately with the original S.R.R.S.. The correlation for the 14 items with identical wording to those of the original S.R.R.S. was $r=.683$ (Paykel et al., 1971).

Further research (Paykel & Uhlenhuth, 1972) continued to refine the Stressful Life Events Inventory by introducing the concept of movement into or out of the individual's psychosocial field. They hypothesized that exits would be more upsetting, and an analysis of ratings given different events bore this out. More recent studies have shown a high number of exit events to be predictive of suicidal depression as compared to other depression, even when total scores on the inventory are controlled (Paykel, Prusoff, & Myers, 1975). Paykel (1974) presents a thorough summary and review of much of the research in the development and use of the Stressful Life Events Inventory.

Current Research and Problems

There are numerous reviews and compendia of research into the relationship between life change stress and illness-- both psychological and physical (Coleman, 1973; B.S. & B.P. Dohrenwend, 1974; Gunderson & Rahe, 1974; Levine & Scotch, 1970; Rahe, 1972). The following review, thus, will summarize very briefly research done and will move to an examination of problems, both methodological and theoretical.

Holmes, Rahe, and their numerous colleagues in the U.S. and abroad have spearheaded research into the relationship between life changes and physical illness (T.S. Holmes & Holmes, 1970; Rahe, 1969, 1972, 1974; Rahe & Arthur, 1968; Rahe, Gunderson, & Arthur, 1970; T.H. Holmes & Masuda, 1974). Other investigators have confirmed the existence of a statistically significant relationship between L.C.U. scores on the S.R.R.S. and various measures of illness behavior including aid-seeking (Bieliauskas & Webb, 1974), patient status (Dekker & Webb, 1974; Ingham & Miller, 1976; Miller, Ingham, & Davidson, 1976), and complications to an existing condition (Nuckolls, Cassell, & Kaplan, 1972). Thus, the evidence is clear that there exists a statistically significant correlation between life change stress and physical illness.

Paykel and his colleagues, along with George W. Brown and his associates, have conducted extensive research into the relationship between life change stress and psychiatric/psychological disorder. Numerous studies focusing on the effect on general psychiatric status or mental health of stressful life changes have shown, again, clear evidence for a correlation between life changes and psychiatric/psychological symptomatology (Bell, Warheit, & Holzer, 1975; Berkman, 1969; Birley, 1972; Brown, 1972; Brown & Birley, 1968; Brown, Sklair, Harris, & Birley, 1973; Myers, Lindenthal,

& Pepper, 1971, 1974; Myers, Lindenthal, Pepper, & Ostrander, 1972; Smith, 1971, Wildman, 1974; Holzer, 1977). Studies by Paykel and his colleagues have focused on the effect of life change stress on depression (Paykel, 1974; Paykel, Myers, Dienelt, Klerman, Lindenthal, & Pepper, 1969; Paykel et al., 1971; Paykel, Prusoff, & Myers, 1975; Paykel & Tanner, 1976).

Recent research has also begun to focus on anxiety and related states resulting from life changes. Lauer (1973) conducted a cross-cultural study of Americans and Britons which found significant relationships between life change scores and scores on the Taylor Manifest Anxiety Scale. Dekker and Webb (1974) found similar results correlating S.R.R.S. and T.M.A.S. scores for both patients and "normal" controls. Reavley (1974) found very high correlations between S.R.R.S. scores and manifest anxiety and a measure of state anxiety in a sample of British subjects. Morgan (1977) found a similar, although attenuated, relationship using a sample of American university students and the college-modified form of the S.R.R.S.

However, despite evidence which strongly confirms the construct validity of life change scales, there has been frequent and mounting criticism of the scales as screening devices. While a number of articles have focused on methodological criticisms, a larger number have focused on the issue of unique perception of events by each individual and the resultant statistical "noise in the system."

On methodological grounds, Grant, Gerst, and Yager (1976) criticize the use of the S.R.R.S. with psychiatric patient populations. They report a study comparing the scaling of life events by a sample of psychiatric patients and a sample of "normals." The results were that, while the two groups agreed on the rank ordering of events well, there was a moderate difference in the actual numbers used, with psychiatric patients giving higher magnitude ratings to most of the events, especially those of a marital-family or personal nature (Grant et al., 1976). These data raise a question concerning the cross-cultural scaling of the S.R.R.S. conducted by Rahe and his associates in which the high correlations reported are rank order correlations and product moment correlations are not reported.

Other methodological studies have addressed other issues. Bieliauskas and Webb (1974) report differences in the correlation of S.R.R.S. scores and aid-seeking when two different methods are used to obtain the S.R.R.S. total score. A second study (Bieliauskas & Strugar, 1976) examined the effect of sample size on S.R.R.S. scores and their relation to aid-seeking. The results indicated that the power of S.R.R.S. scores to discriminate aid-seeking from non-aid-seeking individuals decreases as the size of the sample decreases from $N=253$ to $N=53$. In explaining these results, the authors suggest that individual mediating

factors which may attenuate the degree of the S.R.R.S.-aid-seeking behavior relationship may well assume more importance in smaller samples where random distribution is less likely to cause their cancelling out of each other (Bieliauskas & Strugar, 1976).

Hudgens (1974) reviews a great deal of data which suggest strongly that the retrospective design of most life change studies is inadequate. He recommends that retrospective studies be stopped and that attempts be made to mount large longitudinal studies which look not only at the relationship of life changes to illness, but also at the change in scaling of items as influenced by illness experience (Hudgens, 1974).

Possibly the strongest methodological criticism of the S.R.R.S. and its use is centered on basic psychometric procedures (Hough, Fairbank, & Garcia, 1976). They examine the development of the scale. However, although they consider it a laudable attempt to quantify a complex phenomenon, they strongly criticize three major aspects of the scale and its use. They discuss the relative lack of effort and concern for the careful construction and administration of the instrument. They see the use of rank order correlations in the cross-cultural scaling to be a glossing over of valid cultural variation. Finally, the frequent use of non-parametric analytic statistics with the ratio scale data produced by the instrument is stated to be an inadequate use of the

Despite these methodological criticisms of the instrument and its common use, the S.R.R.S. and Paykel's counterpart scale continue to be used with increasing frequency as epidemiological and screening tools. However, another criticism, of a more theoretical nature, has limited somewhat the use of the S.R.R.S. and has led to a new type of study utilizing the S.R.R.S. This type of study has focused directly on the issue of desirability and/or individual differences in the perception of life change events. Two studies have looked, further, at personality as an important dimension either mediating between life change and illness or determining to a certain extent the perception of the events themselves.

Two of the earliest studies of life changes and their effects used, as subjects, groups of people who had all experienced the same, traumatic changes in their lives (Hinkle et al., 1958; Hinkle & Wolff, 1958; Hinkle, 1974). These studies report that the way the individual perceived and attached meaning to the event was a more accurate predictor of illness than the actual events themselves. The authors report that those people who perceived the events as more challenging, more demanding, and more conflict-laden, were those who showed a greater frequency of illness following the events (Hinkle et al., 1958; Hinkle & Wolff, 1958; Hinkle, 1974). These studies point toward a constellation

of personality and/or perception factors which strongly influence the experiences of some individuals who have lived through traumatic personal and social changes.

More recent studies have addressed the issue of perception from other vantage points. Hudgens, Robins, and Delong (1970) gathered data on life changes from 80 hospitalized psychiatric patients and 103 relative-informants. All subjects were questioned about life changes in eleven areas of daily life using the same interview schedule. The results showed only a 57 percent rate of agreement on actual events of the patients and their informants. Further, in estimating the effect of agreed-upon events on the psychiatric illness, the patient group attached much more significance to the events than the informants (Hudgens et al., 1970). These findings call into question the validity both of retrospective designs and of the use of "standard" ratings of events.

Moorehead (1974) asked 431 black and white college students to rate the events of the Social and Collegiate Readjustment Scale. Significant differences were found in the perception of the events between the groups. Further, there were significant differences in the events chosen by each group as ones which would induce them to seek aid from a counselor. Analysis of the group using the Rotter I-E Scale showed that blacks rate more stressful and more likely

to induce aid-seeking, events which were externally oriented, whereas the whites rated most strongly events which were internally oriented. An analysis of the total sample by I-E showed significant differences in the ratings of 15 of the 47 events on the scale (Moorehead, 1974).

Further empirical confirmation of the findings reported by Hinkle and his colleagues is found in Thurlow (1971), Vinokur and Selzer (1975), and Yamamoto and Kinney (1976). Thurlow's data raise the strong possibility that a person's perception of an event may be of greater importance in determining the number of subsequent illnesses than the actual occurrence of the event (1971). Vinokur and Selzer (1975) used a modified life events checklist. Their findings indicate that while accumulation of life events was correlated with tension, distress, and emotional disturbances, this relationship held true only for undesirable events. The authors conclude that the desirability attached to an event may be more important in determining psychological distress than the readjustment necessitated by the events (Vinokur & Selzer, 1975).

Yamamoto and Kinney (1976) report a study focused on the ratings of life events by pregnant women and the rating of events' influence on their pregnancy. Their results indicate that using a person's own ratings or mean ratings from groups very similar to the individual is a crucial step

in making the life event scales more sensitive. In this study, desirability of the event was shown to be a very important factor in accounting for the difference between subjective, idiosyncratic ratings and the standard ratings (Yamamoto & Kinney, 1976).

As an attempt to increase the sensitivity of S.R.R.S. prediction without directly addressing the issue of desirability, a number of studies have looked at anxiety, in various forms, as a mediating state between the actual life change event and the onset of illness. Studies by Lauer (1973), Reavley (1974), and Morgan (1977) have shown marked increase in correlations from those between S.R.R.S. scores and illness to those between S.R.R.S. scores and measures of anxiety. On a slightly different track, Wall (1974) looked at the mediating effect of ego-functioning on the life change-illness relationship. Using two scales of ego-functioning and the Cornell Medical Index to measure illness, he found the relationship to be very complex and non-linear. However, there were significant interactions of S.R.R.S. with each of the measures of ego-functioning which point to personological differences in response to life change events. He suggests that ego-involvement as a factor may affect the threshold at which life change events result in symptoms (Wall, 1974).

A recent exchange of articles typifies the concern of researchers and theoreticians concerning the role of perception in determining response to life changes. Wershow and Reinhart (1974) report a study employing the S.R.R.S. as related to patient hospitalization. Negative results in the study led them into a general critique of the S.R.R.S. which, although having made some good points, reached some erroneous conclusions (Wershow & Reinhart, 1974). As Caplan (1975) clearly elucidates, one must show his sample to be closely similar to the standard sample, before the use of the standard weights are appropriate. Further, there is evidence to suggest that life change unit weightings of events differ from one person to another and that the person's own ratings of the event are more predictive of future illness than the standard ratings. Aside from differences in ratings, some events, due to their nature as exits from the social field or as traumatically undesirable, are more predictive of illness than others (Caplan, 1975). Thus, Caplan (1975) concludes that the S.R.R.S. can be used effectively in research, but must be used with special consideration given to the limitations discussed above.

In an attempt to answer limitations of the S.R.R.S. based on the variation in individual perception of or response to events, Manack, Hinricksen, and Ross (1975)

conducted a study which included an assessment of one personality dimension thought relevant to life change stress. The authors examined changes in the relationship between life changes and illness across the personality factor of locus of control of reinforcement across conditions of moderate and extreme life changes. Results showed a clear, significant difference between internalizers and externalizers under conditions of low to moderate life changes. In this instance, the internalizers showed much less illness than the externalizers. However, under conditions of extreme life change, the difference between internalizers and externalizers disappeared (Manack, Hinricksen, & Ross, 1975). Although this study showed a significant effect of personality in the life change-illness relationship, it cannot answer the question of where the difference exists. Do internalizers perceive the basic life change events differently from externalizers, thereby leading to a different relationship with illness? Or do internalizers perceive the events similarly but respond to them differently? The present study will attempt to address this question by studying one process independent of the other.

Theoretical Models and Concept of Demand

Although considerations of space prevent a full exposition of the many theoretical models of life change stress and its relationship to physical and psychological breakdown, this section will present an outline of five of the major models and an exploration of the central concept of demand. The reader desiring a more detailed and intricate development of the theoretical models is referred to the original sources noted below. While Selye's model is primarily physiologically oriented and derived from research on animals, the others focus on and derive from research concerning the physical and psychological effects of life stress on humans.

Selye (1956, 1974, 1975) conceptualizes stress essentially as a demand for activity on the part of the organism. The occurrence of a stressor, any noxious situation to which the organism must respond, sets in motion a three stage reaction. In the first few moments following application of the stressor, specific physiological and biochemical reactions take place which resemble the defensive physiological reactions to physical trauma. Thus, this stage is called the Alarm Reaction. If the stress persists over time, the organism enters the Stage of Resistance which is characterized by physiological reactions essentially opposite

to those of the first stage. This stage is associated with a marked elevated resistance to disease and physiological dysfunction. It seems to represent the organism's attempt to cope with the stress by accommodating to it. When the accommodation of the second stage fails and the stress persists for a long period of time, the organism enters the Stage of Exhaustion. This final stage is characterized by physiological and biochemical reactions resembling those of the Alarm Reaction. Persistence of this stage leads to physiological dysfunction and the eventual death of the organism. This three stage reaction is called the General Adaptation Syndrome as it occurs in response to any stressor, internal or external, physical or psychological in nature. Essentially, then, stress consists of the wear and tear on the body as a result of continuous internal and environmental demands for adjustive activity on the part of the organism (Selye, 1956, 1974, 1975).

B.P. Dohrenwend (1961) abstracted and modified Selye's theory in applying it to humans. He asserts four main elements involved in stress situations: 1) an antecedent stressor, 2) conditioning or mediating factors such as climate or diet which increase or decrease the impact of the stressor, 3) the General Adaptation Syndrome of non-specific physical and chemical changes, and 4) the consequent adaptive responses of the organism to the situation. The stressor

is defined as any agent that produces stress. The mediating factors consist of internal (self-prescriptive) and external (societal) constraints to a course of action called for by the stressor. The subjective experience of stress is a state intervening between the antecedent constraints and consequent efforts to reduce constraint and adapt to the stressor event or situation. The general paradigm involves the stressor and mediating factors interacting to produce stress which impells the General Adaptation Syndrome and action, which may be adaptive or maladaptive, oriented toward reducing constraint and meeting the demands of the stressor (B.P. Dohrenwend, 1961).

Howard and Scott (1965; Scott & Howard, 1970) point out that physiological models of stress, such as Selye's, cannot account for the intricacies of psychological and sociocultural phenomena in humans. They conceptualize stress, and human functioning in general, in problem-solving terms. A problem is "any condition which is posed to the organism for solution" (p.144). Two assumptions underlie the view that human functioning is problem-solving. First, a human is comfortable only when he has reduced all environmental and self-induced threats to a minimum. Secondly, when a human experiences a threat in one or more of its environmental fields, he is motivated to reduce the threats. In essence, this model assumes a dynamic equilibrium in

threat-free environmental fields, and a disequilibrium in fields which contain a threat. The organism, then, is motivated to attain dynamic equilibrium in all environmental fields.

The threats or demands made upon the individual can arise in four possible ways: 1) problems can be posed to the individual from his own internal (biochemical) environment, 2) problems can be posed from the individual's external physical environment, 3) problems can be posed from the individual's own psychological environment, and 4) problems can be posed from the individual's sociocultural milieu. Thus, problems can be posed as an internal or external stimulus in a symbolic or non-symbolic dimension. For the efforts at problem-solving to result in mastery, three conditions must be met. First, the individual must have an adequate supply of energy. Second, the individual must have the general and specific resources necessary for the problem's resolution. Third, the problem must be formulated in such a way that is solvable. Given these conditions, the individual's response can take one of three forms: assertive, divergent, or inert, only the first of which can lead to true mastery.

Mastery of the problem leads to reduction in tension and reestablishment of the dynamic equilibrium in the field of question. Additionally, "the state of the organism will

be superior to its state prior to the time it was confronted with the problem" (p. 149). If the same problem arises again, the organism will solve it more quickly and with less expenditure of energy, analogous to the body's increased immunity to a disease contracted and from which it has recovered. Thus, a person's problem-solving efficiency is proportional to the degree of previous demands and success at solving these demands.

Failure to achieve mastery results in the generation of tension. Part of the tension comes directly from the disequilibrium remaining after unsuccessful problem-solving. An additional measure of energy must also be expended in binding and maintaining the status quo of the remaining tension. This double expenditure of energy necessitates the individual being in a constant state of mobilization. To the extent that excess maintenance tension exists, the individual is said to be experiencing stress. The consequences of this continuing stress are maladaptive behaviors and physical and psychological dysfunction (Howard & Scott, 1965; Scott & Howard, 1970).

In his article reviewing a great deal of the research into the life stress-illness relationship, Coleman (1973) also presents a theoretical model of stress and the person's reactions to it. He defines stress as the adjustive demands made upon the individual and delineates three types of stress:

frustration, conflict, and pressure. It is pressure which forces the individual to speed up and/or intensify his efforts at adjustment and which is most increased by the fast-paced tempo of modern life. Stress in humans involves both psychological and physiological functioning. The severity of the stress, and especially the pressure, involves the amount of disruption in the given system which will occur if the individual fails to meet the adjustive demands placed upon him.

The severity of the stress is determined primarily by three factors: "the characteristics of the adjustive demand, the characteristics of the individual, and the external resources and supports available to him"(p.170). Characteristics of the stress situation include the importance, duration, and multiplicity of the adjustive demands made on the individual. The more important the event is, the longer the stress operates, and the more stresses the individual experiences concurrently, the greater will be the experienced severity of stress. Two other characteristics of the situation that can affect the severity of the stress are the familiarity/unfamiliarity of the event and the pyramiding effect. The more unfamiliar and less anticipated a demand, the more severe will be the stress. Pyramiding occurs when there is a gradual buildup of relatively insignificant demands which summate over time to produce stress of great severity.

The characteristics of the individual are also of key importance in determining the severity of stress. Of specific relevance are the individual's stress tolerance and the way he perceives the stress situation. Stress tolerance refers to the general degree of stress that a person can tolerate without resulting dysfunction and also includes "weak spots" of high susceptibility to specific stressors. The individual's perception of the degree of threat in the situation has much importance in determining severity of stress.

The third factor determining severity of stress is the external supports or resources available to the individual. When an individual lacks resources, either interpersonal or material, this fact would usually produce an increased severity of stress and diminish the person's ability to cope with the stress situation. The family has been thought to be a prime resource for the individual which is either available or only partially available for him.

According to this model, we cope with stress on three levels. On the biological level we have built-in damage repair and immunological systems. On the psychological level we have built-in defensive mechanisms. On the socio-cultural level we have interpersonal individual and group resources such as marital partners and labor unions available to us. The biological mechanisms seem to operate with

minimal learning. Specific reactions included here would be fainting in the face of a traumatic event, the disaster syndrome, and the stages in the acceptance of death. A second type of psychological mechanism is the learned coping pattern which is task oriented. These reactions typically include rational and constructive decision-making and problem-solving skills and strategies. The third type of psychological mechanism is the defense-oriented reaction which consists largely of the ego defense mechanisms such as repression, denial, projection, and reaction formation. These last reactions are seen as learned in order to defend the individual from stress which might otherwise result in physical and/or psychological dysfunction.

The success of these coping patterns can be evaluated in terms of adaptive and maladaptive behavior (this includes physiological and psychological responses and reactions). Even successful adaptation to stress requires a payment. There is a temporary lowering of adaptive effectiveness during adaptation. This makes the individual more acutely susceptible to other stress. It also makes the individual more rigid in his choice of and use of different, alternative coping responses. In addition, even successful adaptation involves wear and tear on the physical and psychological systems of the person, as described by Selye (see above). However, surviving and adapting to stress can increase the total adjustive resources of the individual (Coleman, 1973).

The last model to be presented here was proposed by Rahe et al.(1974). Based on his past research, Rahe has constructed a model of life stress and illness utilizing the principles of optics. Different intensities of life change, expressed in life change unit scores, are represented by light rays of different intensity. These rays are altered as they pass through the "polarizing filter" of the individual's past experience, which may alter his perception of the importance of certain of the events. The altered rays then pass through a "negative lens" representing the individual's employment of certain defense mechanisms such as denial which "diffract away" the impact of certain of the experienced events. The light rays (life events) which remain activate a myriad of physiological reactions. These physiological reactions are then modified by a "color filter" which absorbs some, by effective coping, and pass some on, by not coping with them. The model assumes that prolonged, "unabsorbed" physiological reaction will result in dysfunction of the given organ system and bodily disease. The dysfunction may be perceived by the person as a bodily symptom and, once this happens, the person may or may not consult a physician regarding the symptom(s). This is translated into a medical diagnosis on the "illness rule" of medical records, which are often the dependent measure. Thus, the life events which occur are mediated by the

individual's perception, past experience, psychological defenses, coping with specific physiological reactions, attention to bodily symptoms, and tendency to consult a physician before demonstrable "illness behavior" is seen (Rahe et al., 1974). This process of mediation is underlied by the concept of readjustment. Stress is seen as the readjustment in an individual's routine necessitated by the life change event, with no consideration of desirability as an important dimension (Holmes & Rahe, 1967).

Despite differences in many aspects of the theories presented above, there is a common element of demand represented in all. For Selye (1956), the demand is a demand for activity on the part of the organism. The demanded activity is the Alarm Reaction as the first reaction to a stressor. For Howard and Scott (1965), demand is seen as the disequilibrium which arises from problems being posed in one of the individual's environmental fields. For Coleman (1973), stress is adjustive demand, and for Rahe and his research associates (Rahe, 1972; Rahe et al., 1974), stress results from the demand for social readjustment. Research by Paykel and his associates, cited earlier, has shown that exits from the social field present not only demand but a threat to self-esteem which is highly related to depression (Paykel, 1974).

However, the single concept of demand cannot adequately account for the stress-illness relationship. There is still the problem of individual differences in the relationship between life changes and illness. Hinkle's research (Hinkle et al, 1958; Hinkle & Wolff, 1958; Hinkle, 1974) showed clearly that those people who perceive life changes as demanding and challenging are more likely to experience stress and the resultant negative changes in health status. This finding supports the factor of individual perception as an important determinant of stress which is included in the theories presented above. Thus, it appears that personality factors related to the perception of and response to demand would have relevance in the individual's final response to life changes. The present study is based on this premise and will investigate the effects of three personality factors which are described in the next section.

Personality Factors Related to Demand

There are three personality factors which seem to have a good deal of theoretical influence on perception of and response to situational demand. The first of these is locus of control of reinforcement. Locus of control of reinforcement refers to the construct developed by Rotter (1966), who states:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him. When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control. (p.1)

The locus of control construct can be seen to relate to both the perception of, and the response to life change events. Perceiving desirable or undesirable life changes as under one's own control as opposed to the control of luck, chance, or fate may well alter the person's basic perception of the stressfulness of the event. Further, if one believes he is in control of his own reinforcements, it follows that he will respond differently than if he believes he is not in control of his own reinforcements. Studies, cited earlier, have already shown differences in the relationship between life change and illness across the range from internal to external locus of control (Manack et al, 1975; Moorehead, 1975). Thus, one would expect systematic variation in individual ratings of life change events across the dimension of internal-external locus of control.

Likewise, the construct of repression-sensitization, developed by Byrne (1964), relates to both perception of

and response to life change events. People who use repression are conceived of as being slow to perceive threat, quick to deny threat or personal failure, and ready to forget distressing events. On the other hand, people who use sensitization are characterized by unusually speedy recognition of threat and better than average memory of failure and distress. Repressors and sensitizers would be expected to perceive an event such as being fired from work or expelled from school quite differently. To the extent that the repressor could deny the threat to self-esteem involved, one would expect him to react without much affective, subjective experience of stress. Conversely, a sensitizer, who would be acutely aware of the threat involved in the event, would be expected to experience not only the readjustive demand of the event, but also a great deal of affective distress related to the threat.

Research by Byrne and his associates (Byrne, Golightly, & Sheffield, 1965) has shown that repressors and sensitizers would be described differently by others, with repressors appearing consistently, considerably better adjusted in the eyes of others than sensitizers. The ability to deny and repress threat, failure experiences, and distress allows the repressor to use all his energy to adjust to the event whereas the sensitizer expends a great deal of energy in coping with his affective reactions to the event as well

as the event itself. Thus, repression-sensitization would be expected to influence not only the perception of a life change event, but also the efficiency of the responses to it. Thus, one would expect systematic variation in individual ratings of life change events across the dimension of repression-sensitization.

The third personality factor hypothesized as relevant to life change stress is predominant mode of information processing as conceptualized and operationalized by Kagan et al. (1967) in the Learning Strategies Questionnaire (L.S.Q.). The learning strategy construct involves an underlying continuum from a global to a detail orientation in information processing. Kagan et al. (1967) define the ends of the continuum as follows:

Persons on the one extreme-where the details of a learning situation would constitute the major focus of attention-we identified as focusers. Persons on the other extreme-where details receive less attention as the individual continually tries to attend to and piece together the larger picture of the presentation-we identified as scanners. (p. 381)

The predominant mode of information processing, focusing versus scanning, clearly has a strong influence on perception of life change events. A focuser, faced with the event of moving to a new residence, would be faced by the myriad details involved in such an event. The scanner, on

the other hand, experiencing the same event, would view the event much more as a more unitary event with all the details being important only as they fit into the global experience of the event. Thus, one would expect systematic variation in individual ratings of life change events across the dimension of information processing involved in the L.S.Q.

Following from the discussions of demand in the previous section and of personality factors above, the next section will develop hypotheses to be tested in the present study.

Hypotheses

Following from the exposition of standardization across cultures and sub-cultures of the S.R.R.S. and the discussion of Caplan (1975), the following hypothesis is proposed:

Hypothesis 1: There will be a statistically significant, positive correlation between the means of the ratings assigned the events by this sample and standard ratings.

Following from the discussion of locus of control of reinforcement as a relevant factor for perception of and response to demand, and thus to life change, the following hypothesis is offered:

Hypothesis 2: There will be a statistically significant correlation of each subject's rating of the 46 events and his/her score on the Rotter I-E Scale with internalizers showing lower ratings.

Following from the discussion of repression-sensitization as a relevant factor for perception of and response to demand, and specifically the demand of life change events, the following hypothesis is offered:

Hypothesis 3: There will be a statistically significant correlation of each subject's rating of the 46 events and his/her score on the R-S Scale with repressors showing lower ratings.

Following from the discussion of mode of information processing as a relevant factor for perception of demand, and, specifically, the demand of life change events, the following hypothesis is offered:

Hypothesis 4: There will be a statistically significant correlation of each subject's rating of the 46 events and his/her score on the L.S.Q.

Following from the discussion of individual differences in perception of events and the diverse natures of the events on the college-modified S.R.R.S., it is likely that the above hypotheses (numbers 2, 3, and 4) will not be confirmed for each event. Thus, using a personal mean of the ratings for all 46 events for each subject, the following hypotheses are offered:

Hypothesis 5: There will be a statistically significant correlation of each subject's personal mean rating with his/her score on the Rotter I-E Scale with internalizers showing lower mean ratings.

Hypothesis 6: There will be a statistically significant correlation of each subject's personal mean rating with his/her score on the R-S Scale with repressors showing lower mean ratings.

Hypothesis 7: There will be a statistically significant correlation of each subject's personal mean rating with his/her score on the L.S.Q.

The events on the college-modified S.R.R.S. can be roughly divided into those which can be assumed to be of a voluntary nature and those which can be assumed to be

of an involuntary or accidental nature. There are other events which cannot be assigned to the voluntary or accidental groups on an a priori basis. Events such as minor violations of the law (#3), being pregnant and unmarried (#6), and major change in vocational plans (#7), can be seen to involve a good deal of personal responsibility in their occurrence. Events such as death of a close friend (#2), brother or sister leaving home (#4), and loss of job by one of your parents (#5) involve little or no responsibility on the part of the subject in their occurrence. Still other events such as being fired from work, or expelled from school (#1), major change in number of family get-togethers (#8), and acquiring a visible deformity (#11), would involve either great or little responsibility on the subject's part in their occurrence.

A classification of the 46 events of the college-modified S.R.R.S. into categories based on the subject's control over occurrence is presented below.

Subject-controlled events

3. Minor violations of the law (traffic tickets, jaywalking, disturbing the peace).
6. Being pregnant and unmarried.
7. Major change in vocational plans.
12. Becoming involved with drugs or alcohol.
14. Major change in social activities (clubs, dancing, movies, visiting, etc.).
15. Change in residence.

- 16. Fathering an unwed pregnancy.
- 22. Your being put in jail or other institution.
- 26. Getting married.
- 27. Pregnancy of wife (if married) or yourself (if you are a married woman).
- 33. Moving to a new college or university.
- 37. Outstanding personal achievement.
- 41. Major change in your church activities (a lot more or a lot less than usual).
- 46. Starting to work at a new job.

Fate-controlled events

- 2. Death of a close friend.
- 4. Brother or sister leaving home (marriage, attending college, etc.).
- 5. Loss of a job by one of your parents.
- 9. Divorce of parents.
- 10. Marital separation of parents.
- 13. Jail sentence of parent for 1 year or more.
- 17. Death of a brother or sister.
- 20. Marriage of a parent to a step-parent.
- 21. Birth of a brother or sister.
- 23. Mother beginning to work.
- 24. Having a physical deformity from birth which is visible to others.
- 25. Death of a parent.
- 28. Serious illness requiring hospitalization of a parent.
- 29. Jail sentence of a parent for thirty days or less.
- 31. Major change in parents' financial status.
- 32. Pregnancy in unwed teenage sister.
- 35. Increase in number of arguments between parents.
- 36. Death of a grandparent.
- 39. Serious illness requiring hospitalization of a brother or sister.
- 40. Change in father's occupation requiring increased absence from home.
- 42. Addition of a third adult to family (grandparent, etc.).
- 44. Decrease in number of arguments between parents.

Unassigned events

1. Being fired from work, or expelled from school.
8. Major change in number of family get-togethers (a lot more or a lot less than usual).
11. Acquiring a visible deformity.
18. Change in being accepted by your peers.
19. Discovery that you were an adopted child.
30. Breaking up with a "steady" boyfriend or girlfriend.
34. Increase in number of arguments with parents.
38. Sexual problems or difficulties.
43. Decrease in number of arguments with parents.
45. Failure of a course in school.

The standard ratings (Bieliauskas & Webb, 1974) of these groups of events do not appear to differ (Subject-control \bar{X} =54.214, Fate-controlled \bar{X} =52.818, Unassigned \bar{X} =53.50). However, these are ratings strictly of readjustment without the element of desirability included (Bieliauskas & Webb, 1974). From Paykel et al.'s (1971) point of view, the mean ratings may change markedly by rating upset elicited by each event, rather than readjustment. From his view, events which are subject-controlled, while threatening to the self-esteem of an individual with internal locus of control, would not at the same time threaten his or her general view of internal locus of control. On the other hand, events which are fate-controlled would involve threats both to self-esteem and to the individual's view of their own locus of control of reinforcement. Subtracting the subject's personal mean rating for fate-controlled

events from his personal mean rating for subject-controlled events would give a measure which would thus be related to locus of control. Consequently, the following hypothesis is offered:

Hypothesis 8: There will be a statistically significant correlation of this difference score with score on the I-E Scale such that internalizers would have lower difference scores and externalizers higher difference scores.

These hypotheses are offered with the assumption of alternative hypotheses holding no statistically significant correlations. Further assumed is the traditional assumption of all other factors being equal or appropriately controlled.

CHAPTER III

METHODOLOGY

Subjects

The subjects in the present study were 274 undergraduate students at a large, southeastern university. They were recruited by self-selection from the "subject-pool" of the Psychology Department of students enrolled in introductory level psychology courses. Although selection is not random, this limitation is not serious as there was a wide variation in the personality measures obtained, allowing an analysis of life change event ratings across these measures. A demographic profile of the subjects involved in the study is presented in Table 1. As can be seen from the data, the subjects were primarily young, single, sophomores, whose families showed above-average socioeconomic status. However, considerable variation exists across age, education level, and socioeconomic status, suggesting generalizability of findings across other groups of single university students.

Table I

Demographic Characteristics of the Sample

1. Age:	<u>Range</u> 17-29	<u>Mean</u> 19.43	<u>Median</u> 19.17
2. Sex:	<u>Male</u> 117	<u>Female</u> 157	
3. Marital Status	<u>Single</u> 263	<u>Married</u> 4	<u>Divorced</u> 4
4. Years of School completed	<u>Range</u> 12-16	<u>Mean</u> 13.39	<u>Median</u> 13.27
5. Duncan Index of SES ^a	<u>Range</u> 7-96	<u>Mean</u> 62.64	<u>Median</u> 64.00

a Reiss, A.J. Occupations and social status. New York: Free Press, 1961, pp. 263-275.

Procedure

The subjects were assembled in a classroom in groups ranging in size from two to seventy-six on weekday evenings, across a span of four weeks in the spring of 1978. After a brief introduction, the investigator handed out to each subject a packet containing an informed consent form, an answer sheet, and the following paper and pencil, self-administering questionnaires:

1. A brief questionnaire tapping sociodemographic characteristics used to describe the sample (Appendix I).
2. The college-modified Social Readjustment Rating Questionnaire. This is a scale of forty-six life change events, modified from the original S.R.R.S. to apply to college students by Bieliauskas and Webb (1974), which the subjects were asked to rate according to the following instructions modified from Paykel et al. (1971):

Listed below are life events which happen to a great many people. Most of these events require some readjustment in our daily pattern of life. Some require a great amount of readjustment over a short duration while others require smaller amounts of readjustment over longer intervals of time. Some of the events are desirable while others are decidedly undesirable.

You are asked to rate the degree to which each event would be upsetting to you. In making your rating, think about how much readjustment the event would require as well as how desirable or undesirable it would be. Use your own personal

experience and what you know about the experience of other people to make your decision. Although one event might be more upsetting to some people than to others, use all your experience to decide how upsetting the event would be to you.

Please read through the entire list of events and think about each. Then rate the degree to which each would be upsetting to you on a scale of 0 to 100, where 0 is not upsetting at all and 100 is extremely upsetting.

The listing of the items of the college-modified S.R.R.Q. is presented in Appendix II.

3. The Rotter Internal-External Scale of locus of control of reinforcement. This is a scale of twenty-nine pairs of statements, twenty-three scored and six filler pairs, from which the subject was asked to choose one according to the following instructions.

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief: obviously there are no right or wrong answers.

Please record your answers to the items by placing an "x" in the blank in the appropriate column of the answer sheet. Answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for each item.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also, try to respond to each item independently when making your choice; do not be influenced by your previous choices.

The scale was scored, as standard, in the direction of externality with a maximum internal score of zero and a maximum external score of twenty-three. The items include eleven where the a response is scored and twelve where the b response is scored. The listing of items is presented in Appendix III.

4. The Byrne Repression-Sensitization Scale. This is a scale of 127 true-false items taken from the Minnesota Multiphasic Personality Inventory. Subjects were instructed as follows:

This inventory consists of numbered statements. Read each statement and decide whether it is true as applied to you or false as applied to you.

Please record your answers to the items by placing an "x" in the blank in the appropriate column on the answer sheet. If the statement is TRUE or MOSTLY TRUE, as applied to you, place an "x" in the blank in the column headed T. If the statement is FALSE or NOT USUALLY TRUE, as applied to you, place an "x" in the blank in the column headed F. If a statement does not apply to you or if it is something that you don't know about, make no mark on the answer sheet.

Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

This scale was scored, as standard, in the direction of sensitization with a maximum repression score of zero and a maximum sensitization score of 127. Of the items, ninety-eight are scored where a response of "True" is given and twenty-nine are scored where a response of "False" is given. The listing of the items is given in Appendix IV.

5. The Learning Strategies Questionnaire. This scale is a forty-one item, multiple choice measure with the following instructions:

This questionnaire asks you to describe the way you study and learn. There are many different ways to study and learn, any one of which may be effective for a particular individual. Since this is the case, there are no right or wrong answers to these questions. Please indicate, in general how accurately each statement describes you by marking your answer sheet with an "x" according to this key:

-
1. This describes me very well.
 2. This describes me moderately well.
 3. This does not describe me very well.
 4. This is not true of me at all.
 5. I am very inconsistent in this situation.
-

This scale is scored in the direction of focusing with very low scores indicating scanning as a predominant mode of information processing, and high scores indicating focusing

as the predominant mode. Of the forty scoreable items, twenty-one are scored for responses of "1" or "2" and nineteen are scored for responses of "3" or "4." The listing of the items and the additional key for responses are presented in Appendix V.

Data Reduction and Analysis

Following the procedure outlined above, all answer sheets were examined closely for any evidence of obvious response bias. One subject's answer sheet showed obvious response bias with all responses falling in one column on the three personality scales. This was discarded. Another answer sheet was marked with many omissions and, for this reason, was also discarded. This review left 274 usable answer sheets.

The personality scales and measures of sociodemographic characteristics were scored and coded by hand onto the answer sheets with careful double-checking. These data were then punched onto IBM 80-column cards and verified by professional keypunch personnel. The cards were read into an IBM card-reader and all computations were performed by an Aymdal computer using Statistical Package for Social Sciences programs.

CHAPTER IV

RESULTS

This chapter will present the analysis of the data and the testing of the specific hypotheses stated above. This will be done in two major sections. The first will present the results of the standardization of the college-modified S.R.R.S. and the comparison to the standard (readjustment) ratings with a test of Hypothesis 1. The second section will present the results of the data analysis for the effects of the personality factors on the ratings of the events. Within this section will be subsections dealing with the results pertaining to the I-E Scale, the R-S Scale, the LSQ, a combination of all three personality measures, and, finally, the effect of event group and locus of control of reinforcement on rating. This section will include formal tests of Hypotheses 2 - 8.

Standardization

The average, rounded rating given to each event along with the standard ratings, the difference between standard and new ratings, and the percent difference from the standard rating are presented in Table 2. Close inspection of the data reveals changes from standard to upset rating which vary from -32 to +39. The mean change from standard to upset rating is +2.74. Of the forty-six events, twenty-four showed higher upset ratings, twenty-one showed lower upset ratings, and one was rated the same. Of the twenty-four which showed increases in ratings, three increased more than thirty units, five increased between twenty and thirty units, nine increased between ten and twenty units, and seven increased less than ten units. Of the twenty-one events which showed decreases in ratings, one decreased more than thirty units, three decreased between twenty and thirty units, ten decreased between ten and twenty units, and seven decreased less than ten units.

Those events which showed the largest increase in rating from readjustment required to upset produced are numbers 39, 36, 1, 17, 2, 28, and 35. It is notable that, with the exception of number 1 (Being fired from work, or expelled from school.), all of these events are changes for the worse for people close to the subject. The events include

Table 2

Comparison of "Readjustment" and "Upset" Ratings for Events

<u>Event</u>	<u>Readjustment Rating^a</u>	<u>Upset Rating^b</u>	<u>Difference in Ratings</u>	<u>% Difference</u>
1. Being fired from work, or expelled from school.	47	80	+33	+70.21
2. Death of a close friend.	63	89	+26	+41.27
3. Minor violations of the law.	31	28	-3	-9.68
4. Brother or sister leaving home.	37	26	-11	-29.73
5. Loss of job by one of your parents.	46	62	+16	+34.78
6. Being pregnant and unmarried.	92	79	-13	-14.13
7. Major change in vocational plans.	25	45	+20	+80.00
8. Major change in number of family get-togethers.	35	28	-7	-20.00
9. Divorce of parents.	77	81	+4	+5.19
10. Marital separation of parents.	69	78	+9	+13.04
11. Acquiring a visible deformity.	81	82	+1	+1.23
12. Becoming involved with drugs or alcohol.	76	62	-14	-18.42

Table 2 (continued)

<u>Event</u>	<u>Readjustment Rating^a</u>	<u>Upset Rating^b</u>	<u>Difference in Ratings</u>	<u>% Difference</u>
13. Jail sentence of parent for one year or more.	75	86	+11	+14.67
14. Major change in social activities.	38	33	-5	-13.16
15. Change in residence.	20	30	+10	+50.00
16. Fathering an unwed pregnancy.	77	74	-3	-3.90
17. Death of a brother or sister.	68	95	+27	+39.71
18. Change in being accepted by your peers.	67	58	-9	-13.43
19. Discovery that you were an adopted child.	64	45	-19	-29.69
20. Marriage of a parent to a step-parent.	63	50	-13	-20.63
21. Birth of a brother or sister.	50	23	-27	-54.00
22. Your being put in jail or other institution.	83	89	+6	+7.23
23. Mother beginning to work.	26	15	-11	-42.31
24. Having a physical deformity from birth which is visible to others.	62	62	0	0.00
25. Death of a parent.	87	95	+8	+9.20

Table 2 (continued)

<u>EVENT</u>	<u>Readjustment Rating^a</u>	<u>Upset Rating^b</u>	<u>Difference in Ratings</u>	<u>% Difference</u>
26. Getting married.	75	43	-32	-42.67
27. Pregnancy of wife (if married) or yourself (if you are a married woman).	65	36	-29	-44.62
28. Serious illness requiring hospitalization of a parent.	55	81	+26	+47.27
29. Jail sentence of a parent for 30 days or less.	53	71	+18	+33.96
30. Breaking up with a "steady" boyfriend or girlfriend.	53	70	+17	+32.08
31. Major change in parents financial status.	45	61	+16	+37.78
32. Pregnancy in unwed teenage sister.	64	71	+7	+10.94
33. Moving to a new college or university.	56	42	-14	-25.00
34. Increase in number of arguments with parents.	47	63	+16	+34.04
35. Increase in number of arguments <u>between</u> parents.	46	70	+24	+52.17
36. Death of a grandparent.	36	71	+35	+97.22
37. Outstanding personal achievement.	46	22	-24	-52.17

Table 2 (continued)

<u>Event</u>	<u>Readjustment Rating^a</u>	<u>Upset Rating^b</u>	<u>Difference in Ratings</u>	<u>% Difference</u>
38. Sexual problems or difficulties.	59	65	+6	+10.17
39. Serious illness requiring hospitalization of a brother or sister.	41	80	+39	+97.50
40. Change in father's occupation requiring increased absence from home.	38	50	+12	+31.58
41. Major change in your church activities.	39	24	-15	-38.46
42. Addition of a third adult to family.	34	33	-1	-2.94
43. Decrease in number of arguments with parents.	26	13	-13	-50.00
44. Decrease in number of arguments <u>between</u> parents.	27	14	-13	-48.15
45. Failure of a course in school.	56	73	+17	+30.36
46. Starting to work at a new job.	36	34	-2	-5.56

a from Bieliauskas and Webb (1974)

b mean rating, rounded to nearest number

serious illnesses requiring hospitalization of parents or of a brother or sister; deaths of a grandparent, sibling, or close friend; and increase in the number of arguments between the subject's parents. In the sense that the events in question are focused primarily on another person or couple, their occurrence would be expected to generate more of an emotional reaction than a prescribed need for readjustment. Thus, when desirability of the event is incorporated into the ratings, these events show marked increases.

The events showing the largest decrease in rating of degree of upset as compared to readjustment rating include getting married, pregnancy of wife (if married) or yourself (if you are a married woman), birth of a brother or sister, and outstanding personal achievement. These events seem much more directly relevant to the subject than the group of events discussed above. However, their generally, socially desirable nature may well attenuate the readjustment required to yield an event which does not produce a high degree of upset in the subjects.

When the absolute amount of change in ratings is adjusted for the level of the standard (readjustment) rating, a percent is obtained which is shown, also, in Table 2. There are few changes in the groups of events showing the most change, either increase or decrease, from readjustment

to upset rating. Of all the events showing an increase, three show an increase of over 75%, three show an increase of between 50% and 74%, ten show an increase of between 25% and 49%, and eight show an increase of less than 25%. Of the six showing the largest percent increase in rating, only two are not in the group of events with the largest increase in ratings discussed above. These two new events are major change in vocational plans (#7) and change in residence (#15). Each of these events shows a marked percent increase in rating (80% and 50%, respectively) but remains below the average rating for all forty-six events. Likewise, of the three events showing a marked percent decrease in rating, only one (decrease in number of arguments with your parents) is new, and it is the lowest rating of the forty-six events when rated for degree to which it would be upsetting.

The data can also be broken up according to the classification of events as subject-controlled, fate-controlled, or unassigned. The mean readjustment ratings for the groups, respectively, are 54.21, 52.82, and 53.50. When the mean of each subject's average ratings for each group is computed, it yields means of 45.67, 61.75, and 57.63, respectively. Whereas the readjustment ratings show little difference between the event groups, the upset ratings markedly differ from one group to another. The data suggest that

as the degree of subject's control over the event decreases, the degree to which the event would be upsetting increases. This suggests a direct correlation between undesirability of the event, included in the upset ratings, and a lack of control over the event.

Having examined differences in the two sets of ratings for the events, it is now time to turn to the similarities between the ratings. Included in this is the test of Hypothesis 1. The coefficients of correlation comparing the two sets of ratings are presented in Table 3. As can be readily seen, regardless of the method of correlation used, there is a clear, positive correlation between the ratings of readjustment and upset for the forty-six events. Thus, there is a clear confirmation of Hypothesis 1, that the two sets of ratings would be positively, statistically significantly correlated.

Personality Factors

This section will present the results of the data analysis aimed at determining the effects of the three personality factors on the ratings of the events of the college-modified S.R.R.S. The six sub-sections below include one each reporting the results of the analysis of the data concerning each personality measure, the Internal-External

locus of control scale, the Repression-Sensitization Scale, and the Learning Strategies Scale. Each sub-section will consider the test of the hypotheses associated with that measure. In addition, there will follow sub-sections dealing with the groups of events which show correlations with only one or two or all three of the personality measures and one dealing with the relation between event group and the personality factor of locus of control.

Table 3

Correlation Coefficients of Readjustment Ratings with Upset
Ratings

<u>Correlation</u>	<u>Coefficient</u>	<u>Significance Level</u>
Pearson	.688	<.001
Kendall	.498	.001
Spearman	.685	.001

I-E Scale Results

The correlation coefficients of scores on the I-E Scale with the ratings for each event and with the subject's personal average rating of all forty-six events are presented in Table 4. As can be seen, fourteen of the forty-six events show statistically significant correlations with I-E Scale scores. Of the forty-six events, thirty-eight yield negative correlations of ratings with I-E Scale scores which is the hypothesized direction of the relationship. Of the fourteen events which show significant correlations of ratings with I-E Scale scores, all are in the hypothesized direction. Thus, Hypothesis 2 is partially confirmed.

The group of events which showed significant correlations of ratings with I-E Scale scores do not easily fit into any single category. Two of the events (numbers 15 and 33) are not classified as subject-controlled events. Five of the events (numbers 20, 21, 24, 39, and 42) are classified as fate-controlled events. The remaining seven events showing significant correlations fall into the category of unassigned control. Extrapolating from Rahe's (1972) classification of events as family, personal, work, or financial, one can classify the fourteen events into one of three categories: personal, family, or school/work. When this is done two of the events fall into the school/work realm (numbers 33 and 45), five fall into the family realm, and seven into the personal realm.

A further distinction could be made on the basis of who is directly involved in the event. For example, while events such as getting married (number 26) would involve the subject directly and centrally in the event, other events such as marriage of a parent to a step-parent (number 20) do not do so. When the fourteen events in question are classified by direct or indirect involvement of the subject, ten consist of direct involvement. Examples of this are the following events: 11. Acquiring a visible deformity.; 15. Change in residence.; and 30. Breaking up with a "steady" boyfriend or girlfriend. The four events consisting of indirect involvement include marriage of a parent to a step-parent (#20) and birth of a brother or sister (#21). Thus, one can see that these events do not easily fit into any category. Further discussion of this group of events in relation to the other events will be included in the next chapter.

While Hypothesis 2 covering the I-E Scale and each of the forty-six events was only partially confirmed, Hypothesis 5 concerning the correlation of the personal average for the forty-six events with I-E Scale score was clearly confirmed. The correlation obtained is listed at the end of Table 4. Despite the fact that the correlation is low and accounts for only 2% of the variance in personal average rating, such a correlation would be obtained by chance less than one in

Table 4

Correlations of Each of the Events and the Personal Average of all Events with Scores on Each of the Personality Scales

<u>Event</u>	<u>I-E</u>	<u>R-S</u>	<u>LSQ</u>
1. Being fired from work, or expelled from school.	-.069	.052	.102*
2. Death of a close friend.	-.072	.078	.037
3. Minor violations of the law.	-.021	.107*	.103*
4. Brother or sister leaving home.	-.030	.132*	.074
5. Loss of job by one of your parents.	-.031	-.001	.177**
6. Being pregnant and unmarried.	-.037	.049	.026
7. Major change in vocation plans.	-.061	.228***	.071
8. Major change in number of family get-togethers.	.012	.128*	.113*
9. Divorce of parents.	.024	-.022	.088
10. Marital separation of parents.	.056	-.020	.042
11. Acquiring a visible deformity.	-.158**	.145**	.125*
12. Becoming involved with drugs or alcohol.	-.005	.071	.101*
13. Jail sentence of parent for 1 year or more.	-.062	.039	.068
14. Major change in social activities.	-.098	.141**	.110*
15. Change in residence.	-.136*	.142**	.117*
16. Fathering an unwed pregnancy.	-.053	-.034	.034
17. Death of a brother or sister.	-.077	.034	.038

Table 4 (continued)

<u>Event</u>	<u>I-E</u>	<u>R-S</u>	<u>LSQ</u>
18. Change in being accepted by your peers.	-.149**	.162**	.160**
19. Discovery that you were an adopted child.	-.109*	.210***	.146**
20. Marriage of a parent to a step-parent.	-.125	.081	.105*
21. Birth of a brother or sister.	-.123*	.020	-.002
22. Your being put in jail or other institution.	-.035	.041	.028
23. Mother beginning to work.	-.046	.080	.008
24. Having a physical deformity from birth which is visible to others.	-.102*	.201***	.185**
25. Death of a parent.	-.063	.056	.114*
26. Getting married.	-.069	.167**	-.155*
27. Pregnancy of wife (if married) or yourself (if you are a married woman).	.066	.167**	-.106
28. Serious illness requiring hospitalization of a parent.	-.076	.116*	.107*
29. Jail sentence of a parent for 30 days or less.	-.036	.055	.096
30. Breaking up with a "steady" boyfriend or girlfriend.	-.191***	.198***	.167**
31. Major change in parents' financial status.	-.081	.180**	.100*
32. Pregnancy in unwed teenage sister.	.004	.021	.020
33. Moving to a new college or university.	-.134*	.211***	.112*
34. Increase in number of arguments with parents.	-.064	.229***	.081

Table 4 (continued)

<u>Event</u>	<u>I-E</u>	<u>R-S</u>	<u>LSQ</u>
35. Increase in number of arguments <u>between</u> parents.	-.056	.122*	.081
36. Death of a grandparent.	.026	-.030	.107*
37. Outstanding personal achievement.	-.021	.180**	-.038
38. Sexual problems or difficulties.	-.148**	.132*	.048
39. Serious illness requiring hospitalization of a brother or sister.	-.109*	.077	.058
40. Change in father's occupation requiring increased absence from home.	.037	.030	.092
41. Major change in your church activities.	.010	.109*	.079
42. Addition of a third adult to your family.	-.124*	.176**	.094
43. Decrease in number of arguments with parents.	-.112*	.199***	-.014
44. Decrease in number of arguments <u>between</u> parents.	-.043	.178**	-.013
45. Failure of a course in school.	-.122*	.264***	.187***
46. Starting to work at a new job.	-.084	.281***	.064
Personal average of above events.	-.141**	.266***	.163**

*p<.05

**p<.01

*** p<.001

a hundred times. Such a correlation, in the hypothesized direction, would confirm the role of locus of control of reinforcement as a determinant in the perception of life change events.

R-S Scale Results

The correlation coefficients of scores on the Repression-Sensitization (R-S) Scale with ratings of each of the forty-six events are presented in Table 4. It is clear from the table that the ratings of more events correlate significantly with the R-S Scale than with the I-E Scale. In actuality, for twenty-six of the total of forty-six events, the correlation of rating with R-S Scale score was significant and in all these cases the correlation was in the hypothesized direction. For the forty-six events, only five show negative correlations of rating with R-S Scale score-- forty-one of the correlations go in the expected direction. Thus, one can consider Hypothesis 3, like Hypothesis 2, partially confirmed.

These twenty-six events whose ratings correlate significantly with R-S Scale scores consist of ten subject-controlled events, seven fate-controlled events, and nine unassigned events. Twelve of the twenty-six occur in the personal realm, nine in the family realm, four in the school/work realm, and one in the financial realm. Twenty of the

twenty-six involve the subjects in a direct central way in the event, while six involve the subject more indirectly.

Again, as is the case concerning the I-E Scale, while Hypothesis 3 is only partially confirmed, Hypothesis 6 is confirmed firmly and clearly. The correlation between the subject's personal average of ratings and the R-S Scale score accounts for 7% of the variance and would happen by chance less than one in one thousand times. Such a correlation, along with the correlations of the individual events, tends to support the role of response to threat, in the form of repression or sensitization, in the perception of life change events.

LSQ Scale Results

The correlation coefficients of scores on the Learning Strategies Questionnaire with the ratings of each of the forty-six events and with the personal average rating for all forty-six events are presented in Table 4. Examination of the table shows that twenty-one of the events show ratings which correlate significantly with LSQ scores. Nineteen of these correlations are positive and two are negative. The positive correlations show an association between focusing as a predominant cognitive mode and high ratings whereas negative correlations show an association between scanning and high ratings. The two negative are two of six negative

correlations in the whole group of forty-six events. The analysis of the correlation, thus, shows a partial confirmation of Hypothesis 4, with the addition of directionality that scanners rate events lower than focusers, on the whole.

Combinations of Personality Factors

Careful examination of the data presented in Table 4 shows that twelve of the events show no significant correlations of ratings with any of the personality factors. The mean ratings of these events range from 15 to 95 with a mean of 73.2. They consist of three subject-controlled and nine fate-controlled events. Four occur in the personal realm and eight in the family realm. The nine fate-controlled events involve the subject indirectly or peripherally, whereas the three subject-controlled events involve the subject directly and centrally.

Fifteen of the forty-six events show ratings which correlate significantly with only one of the three personality factors. These events range in average rating from 14 to 95 with a mean of 51.4. Of these, five are classified as subject-controlled, eight are classified as fate-controlled, and two are unassigned. Three occur in the school/work realm. Seven of the events involve the subject directly and centrally, while the eight fate-controlled events involve the subject indirectly and peripherally.

Eleven events show significant correlations of their ratings with two of the three personality factors. These events range in average rating from 13 to 81 with a mean rating of 42.8. Of these eleven, four are classified subject-controlled, four are classified fate-controlled, and three are unassigned. Four occur in the personal realm, six in the family realm, and one in the financial realm. Seven involve the subject directly and four indirectly.

Eight events show significant correlations of their ratings with all three personality factors. These events range in average rating from 30 to 82 with a mean of 57.8. Two of these events are classified as subject-controlled, one as fate-controlled, and five are unassigned. Six occur in the personal realm and two in the school/work realm. All eight events involve the subject directly in the event.

A look at these four groups of events shows that two of the classifications seem related to the degree of relationship between ratings and personality factors. It is notable that the group of events the ratings of which correlate with all three personality factors includes one-half of the events classified as unassigned in control. The group correlating with two personality factors has 30% of the unassigned and the last 20% are in the group correlating

with only one. This progression suggests a relationship between the uncertainty of the subject's role of responsibility in the event and the relationship between its rating and the three personality factors. Such events would allow internalizers to internalize, externalizers to externalize, repressors to say the event was merely a stroke of fate and no threat, and sensitizers to perceive all the possible threat.

Also of note is that all eight events involve the subject directly and centrally in the event. The events involve not an injury to someone else, even a brother or sister, but the acquisition of a visible deformity by the subject himself (#11). In that these events involve the subject directly, they may have a greater potential for good or bad impact on the subject's life and, thus, in some sense, be more "important" or central to a college student. The degree of importance of the event could well influence the degree to which perceptions of the event vary according to locus of control of reinforcement, response to threat, and cognitive style.

Finally, these eight events have average ratings ranging only from thirty to eighty-two. They are a subset of events whose ratings fall in the mid-range of ratings. This can be seen as a possible determinant and a result of their multiple correlation with the personality measures. Being in a mid-ground between trivial (Decrease in number of arguments with

parents) and the devastating (Death of a parent), the perception of these events is more idiosyncratic and related to the subject's individual ways of conceiving, interpreting, and constructing his or her psychological world. Thus, they could well be expected to show correlations of ratings with the personality measures. On the other hand, any event which showed correlations reaching statistical significance with all three personality measures would have to show fairly wide variation in ratings. Consequently, it would be almost impossible, statistically, for the average of these ratings to be at either extreme of the continuum.

Event Group and Personality

The means of the event group ratings were reported above and are further summarized, along with correlation coefficients in Table 5. Despite the theoretical justification, there is no statistically significant correlation between locus of control scores and the difference score. Thus, Hypothesis 8 is rejected.

However, all event group average ratings and the difference score correlate significantly with Repression-Sensitization Scale scores. These results suggest a more important role of the response to threat than locus of control of reinforcement in determining perception and rating of life change events. This issue, along with others raised above

by other aspects of the results, will be discussed in the next chapter which will attempt to integrate the findings of this study and these findings with the extant literature.

Table 5

Event-Group Mean Ratings and Correlation with Personality Factors

<u>Event-Group</u>	<u>Mean Rating</u>	<u>Correlation with</u>		
		<u>I-E</u>	<u>R-S</u>	<u>LSQ</u>
Subject-controlled	45.667	-.104	.285***	.081
Fate-controlled	61.746	-.097	.149*	.159**
Unassigned	57.628	-.202***	.325***	.207***
Difference ^a	-16.080	-.029	.194***	-.062

* $p < .05$ ** $p < .01$ *** $p < .001$

a Difference was computed as Subject-controlled average minus Fate-controlled average.

CHAPTER V

DISCUSSION

This chapter will summarize and attempt to integrate the findings of this study with the existing literature and with the theoretical predictions made. It will be divided into sections addressing the overall standardization, the findings regarding the specific personality factors, the overall personality factors and theories of stress, and directions for future research.

Standardization

The significant correlation between readjustment ratings and upset ratings of the forty-six events is confirmation of the validity of both. The fact that the two sets of ratings correlate positively would strongly suggest that both readjustment and emotional upset relating to desirability of the event enter into the determination of the extent to which the event causes stress for the subject. This is consonant with the different theoretical models of stress which point up not

only the demand for adjustment or problem-solving, but also the emotional reaction to that demand as determinants of the severity of stress.

Differences between the readjustment ratings and the upsetment ratings point to the relative impact of readjustment demand and desirability in determining the stressfulness of a life change event. Some events which did not involve the subject directly showed marked jumps in ratings when undesirability was added to readjustment. Others showed dramatic drops in ratings as desirability of the event attenuated the more radical degree of readjustment required.

In terms of the Dohrenwend (1961) model presented previously, the desirability of an event would act as a mediating factor in the response to the stressor event. For highly undesirable events, the undesirability would add a dimension to the change itself and would constrain the course of action called for by the stressor. For example, the death of a parent is an event which demands readjustment and is clearly stressful. In addition to the readjustment required, however, the person must also act within the personal and societal constraints having to do with the expression of grief. These constraints can intensify the stress resulting from the event and thereby increase the probability of maladaptive reactions such as physical or psychological breakdown.

Likewise, in the Howard and Scott (1965; Scott & Howard, 1970) model, a problem presented in clear terms in one of the four dimensions can be augmented or attenuated by the presence or absence of a concomitant problem in another realm. Again taking the example of the death of a parent, the problem of readjustment involves three dimensions including readjustment in the individual's physical environment, readjustment in the individual's own psychological environment, and readjustment in the individual's sociocultural milieu. To the extent that sociocultural constraints involved in the event inhibit problem-solving in the person's own psychological environment, for example, such as social constraints against open expression of grief which would facilitate the resolution of the problem in the person's psychological environment, to that extent the tension and stress of the event is increased. It is likely that events which are undesirable, by their undesirability pose more or more severe problems to the individual in more realms of his/her existence. Conversely, in some manner, an event which requires much readjustment but is more desirable results in less tension and stress.

The nature of the interaction between readjustment demand and desirability which results in the overall degree of upset or stress produced by an event cannot be addressed by this study. In fact, it may be true that different aspects

of the change ratings are differentially predictive to different outcomes. A question which could be addressed in future research might determine the relative predictive power of readjustment and upset ratings to measures of physical symptoms, psychological distress, number of symptoms, or severity of symptoms. In the past, most of the readjustment research has predicted to physical symptoms, whereas most of the upset research has predicted to psychological distress and psychiatric symptoms. It is not beyond reason to expect that readjustment ratings might predict more accurately to physical sequellae and upset ratings, because of the addition of the emotional reaction component of desirability, to psychological sequellae. Definitive answers to these issues await further research.

Personality Factors

Based on previous research findings of Yamamoto and Kinney (1976) and others, one could expect differences in the perceptions of events to carry through into a difference in overall response. This research, along with that of Hinkle and his associates (Hinkle et al., 1958; Hinkle & Wolff, 1958; Hinkle, 1974), has substantiated the important influence of individual perception in the experience of life change events. This study has been designed to investigate

systematic variation in the perception of those events attributable to three personality factors theoretically related to the concepts of demand and threat.

This section will attempt to explicate the relationship among the major variables and to integrate the findings. It will consist of subsections addressing the I-E Scale, the R-S Scale, the LSQ, the combination of scales, and the event groups and personality factors.

I-E Scale

The relationship between the ratings of the events and locus of control of reinforcement is a real but not a useful one. While fourteen of the events and the personal average ratings correlate significantly and in the hypothesized direction, the I-E Scale score accounts for only 2% of the variance in personal average rating. Half of events in question have unassigned control, i.e. they cannot be classified as fate-controlled or subject-controlled a priori. Most of the events (ten) involve the subject directly and centrally in the event.

These classifications suggest that, to the extent that the responsibility for the occurrence of an event is ambiguous and to the extent that the event involves the subject directly and centrally, the ratings of the event are influenced by locus of control of reinforcement. It could be that

the dubiousness of control over the event sensitizes it in terms of ratings to the influence of locus of control. However, half of the events fall either into the subject-controlled group or the fate-controlled group. These events include change in residence (#15), birth of a brother or sister (#21), moving to a new university or college (#33), and addition of a third adult to the family (#42). These events, though not raising an issue of control, are open to many possible responses on the part of the subject.

In light of the findings of Manack et al. (1975) of the significant difference between subjects showing internal locus of control in their response to life changes, it appears that perception of the event cannot wholly account for this difference. It is likely that perception of the event, as influenced in some events by locus of control, influences to a certain extent the response to the event. In addition, though, it is likely that locus of control may influence the response of an individual to certain events, the ratings of which show no influence from locus of control. Explication and illustration of how locus of control affects the overall process of stress awaits further research.

R-S Scale

The relationship between event-ratings and the response-to-threat construct of repression-sensitization again is only

partially upheld. Slightly more than half of the events are given ratings which correlate significantly with R-S Scale scores. The R-S Scale scores, despite correlating significantly, can account for only 7% of the variance in personal average rating for the subjects.

These findings would tend to support arguments of Paykel et al. (1971), who argued for the inclusion of desirability into the ratings of life change events because of the element of threat implied by undesirable events. The findings are consistent with those of Byrne et al. (1965), who found repressors to be judged consistently, considerably more well-adjusted in the eyes of others. This holds over in repressors rating the events to be less upsetting than sensitizers. However, whether this relationship is maintained across response to the event to the point of the usual dependent measures of physical illness or symptoms and psychological distress or disorder, is a matter which requires further investigation.

LSQ Scale

The confirmation of the hypothesized relationship between mode of information processing and perception and rating of life change events adds a new dimension to the consideration of the experience of stress. It appears that choosing to process information by integrating details

into a unitary picture in some way reduces the perceived stressfulness of certain life change events. The mechanism of this action is not known but could involve a perceived reduction in the number of sub-events which might offset the increase in the severity of the event resulting from event consolidation.

To use the example of moving to a new college or university, a focuser would tend to view this as many semi-independent events such as change in teachers, registration at a college for the first time, starting to school, making new friends, adjusting to a different cultural milieu, etc. On the other hand, to a scanner, whose preferred mode is to integrate details into a unified whole, all the above sub-events would be perceived as merely small aspects of a larger event. While the larger, unitary event may cause more upset to the scanner than each of the individual elements seen by the focuser, it is quite likely that the degree of stress produced by the unitary event is less than the summation of the stress produced by each of the sub-events seen by the focuser. Thus, the relationship between event rating and mode of information processing appears to favor the scanner in his formation of "economy size" changes with an overall lower "price" than a group of "convenience size" changes. Further elucidation of the relationship between mode of information processing and the stressfulness of various life change events, as well as the mechanism of that relationship, requires further research.

Combinations of Personality Factors

As was noted previously, there seem to be two factors related to the events themselves which appear to determine how much their ratings are influenced by the three personality factors. The inability to classify the event as subject-controlled or fate-controlled a priori results in an ambiguous situation when the subject is asked to rate it. The ambiguity of the control of the event forces the subject to impose his/her own structure upon the event in determining a rating much as projective personality assessment measure requires the subject to structure his/her experience. In structuring the event to be rated, or the life change with which to be coped, a person whose orientation is to internal locus of control would project this orientation onto the event resulting in more influence of locus of control on the rating of the event. In a similar manner, repression-sensitization and information processing would be expected to be most influential in the ratings of those events which force more of the structure for the rating to come from the subject.

In addition to ambiguity of control, also mentioned previously, the level of involvement of the subject in the event appears to be directly related to the number of personality factors with which its rating correlates. The forty-six events can be grouped as follows: those whose

ratings correlate with none of the personality measures, those whose ratings correlate with only one of the personality measures, those whose ratings correlate with two, and those whose ratings correlate with all three of the personality measures. Ranked in order from no significant to all three significant correlations, the groups include 43%, 38%, 19%, and 0% of the indirect events, respectively. In terms of the events involving the subjects directly, the groups include 12%, 28%, 28%, and 32% of the events, respectively. The clear progression of decrease for indirect events and of increase for direct events strongly suggests the greater importance of personality in the perception of events with direct and central involvement of the subject. The conclusion reached would be that the more important the event is to the subject directly, the more his/her personality attributes will enter into the perception of the event and, theoretically, would enter into the response to it also.

A final point of discussion concerning these four groups of events is the range of the actual ratings generated. The events the ratings of which correlated with one or only one of the personality measures have ranges from 14 to 95 and means of 73.2 and 51.4 respectively. The group of events, the ratings of which show two significant correlations, has a range of 13 to 81 and a mean of 42.8. The group of events, the

ratings of which correlated significantly with all three measures, has a range of 30 to 82 and a mean of 57.8. In the same sense that Manack et al. (1975) found differences in the relationship between life change and illness across I-E Scale scores to disappear under the extreme amounts of life change, it may be that the personality factors measured in this study function primarily in events in a mid-range of ratings. The relationships between the event ratings and the three personality variables may well wash out as the events become either trivial or devastating.

Clearly, though, whether any personality factor influences, systematically, the rating of an event would depend on factors other than the specific personality factor involved. It may be that some events are susceptible, in rating, to influence from personality factors, while others are not. Also, some events may be influenced in ratings by one personality factor and not another. The specificity of event-rating influence by different personality factors and the reasons for this difference among events, awaits further research.

Event Group and Personality

The discussion of the theoretical relation between locus of control of the event and locus of control of reinforcement as a personality construct led to the hypothesis that the

mean ratings of the different groups of events would be related to I-E Scale score. This hypothesis was not confirmed. In fact, I-E Scale score accounts for less than one tenth of one percent of the variance in the difference score. However, it does correlate significantly with the average rating of the unassigned events. Again, it appears that the events for which locus of control is uncertain provoke an activation of locus of control of reinforcement as a personality factor in the determination of the stressfulness of these events.

The role of threat and desirability in determining the ratings of all the groups of events is seen in the significant correlations of R-S Scale scores with the mean rating for each of the groups and the difference score. Paykel et al.(1971) recognized the element of threat incumbent in the undesirable life change events which are most of the events on any of the scales. This threat to self-esteem varies from event to event but is a pervasive characteristic of all of the event groupings. Consequently, the response to threat, as repression or sensitization, becomes an important factor in the perception of and probably in the response to life change events. The development of other measures which tap into life change threat or explicate the relationship between life change events and the perception of threat, require further research. The next section will

attempt to integrate the findings of this study into the theoretical framework of stress presented earlier in an effort to lay groundwork for the specification of some directions for future research.

Theoretical Discussion

The findings of this study appear to support all the theoretical models of life change stress in the confirmation of certain personality traits as influential in the perception of life change events. The researches of Thurlow (1971), Vinokur and Selzer (1975), Yamamota and Kinney (1976), and others cited in Caplan (1975), assert the importance of an individual's perception of and attachment of meaning to the life change event in determining the outcome reaction to it. In the theoretical models of Dohrenwend (1961), Howard and Scott (1965), Coleman (1973), and Rahe et al. (1974) there are various terms used for constructs which essentially involve individual perception of and attachment of meaning to the event in the production of stress. This study, by confirming systematic differences in individual perception and rating of life change events, has added support to the perception process as an important step in the overall reaction to any stressor.

In addition, this study's findings would tend to support the Howard and Scott (1965) conception of stressors as a threat to the individual over and above demands for adjustment. Clearly, the relative strength of the response to threat factor in comparison to locus of control and information processing in the perception and rating of the events strongly suggests an element of threat inherent in life change events. Within their framework, Howard and Scott conceive of a problem, or life change, as a threat posed to the equilibrium of one or more of the organism's environmental fields (1965; Scott & Howard, 1970). To the extent that problems exist unsolved in one or more of the individual's environmental fields, a state of disequilibrium exists with concomitant tension and motivation to reduce the threat and return to dynamic equilibrium. However, in addition, the existence of a threat in one field could further endanger the overall adjustment of the organism which depends on maintaining a certain tolerance level of dynamic equilibrium across all the environmental fields. In this sense, a life change event would pose both a threat for problem-solving in an environment field, but also a more generalized threat to the overall adjustment of the organism.

However, this above line of reasoning is based on the findings of ratings of how "upsetting" an event would be. Clearly, with as much as the readjustment and upset ratings

differ, it would not be unreasonable to suspect that perception of readjustment might not be as influenced by response to threat as a personality factor as was perception of the degree to which the event would be upsetting. An argument could be built that the occurrence of a life change event would pose a problem in one of the four environmental fields, e.g. the individual's sociocultural milieu. The readjustment to this change may consist of solving a rather circumspect problem in the field. At the same time, though, the individual is perceiving and imparting meaning to the change event and their efforts at readjustment. This cognitive/affective reaction could take on the quality of a problem posed in the individual's own psychological environment. This problem may be the threat to self-esteem seen by Paykel et al. (1971) and the threat responded to by the subjects of this study. Further research would have to be done to shed light on the relationship between response to threat as a personality factor and readjustment ratings of life change events as opposed to upset ratings. Let us now turn to directions for future research suggested by this study.

Directions for Future Research

The next step in the research program begun by this study is to study the relationship between these personality factors and the correlation between life changes and illness or disorder. Manack et al. (1975) have shown a difference in the relationship between life change and illness across the locus of control variable. A similarly designed study could examine the impact of response to threat, as measured by the Repression-Sensitization Scale, and information processing, as measured by the Learning Strategies Questionnaire, as well as locus of control on the relationship between life changes and illness or distress.

A further and more complex study could be designed to answer questions regarding individual perception of events, differential predictive ability of different kinds of ratings (readjustment and upset), and differential effects of personality factors on both the rating of and the response to life change events. A large group of subjects would be administered a demographic questionnaire and the three personality measures. Following this, the subjects would be asked to rate the events of the S.R.R.S. Half of the subjects would be given readjustment rating instructions (Holmes & Rahe, 1967) and half would be given upsetment rating instructions (Paykel et al., 1971). Upon completion of rating, subjects would be asked to indicate which events listed they had ever experienced and which

of those they had experienced in the last six months. Finally, subjects would be asked to complete measures of physical and psychological symptoms such as the Cornell Medical Index or the Symptom Rating Test (Kellner & Sheffield, 1973).

Analyses of the data could focus on many different issues. Do the personality factors influence the readjustment ratings as much, more, or less than they do upset ratings? Do they show stronger or weaker influence on the ratings of events which the subject has experienced in the remote past versus recent past versus never? Are the correlations between readjustment and upset ratings the same for events experienced versus not experienced? Do either of the types of rating predict better to one of the types of symptoms, e.g. do readjustment ratings predict better to physical symptoms and upset ratings predict better to psychological symptoms? Do individual's own ratings predict better to symptoms than overall mean rating; and, if so, what is the difference in relationship between the readjustment group of the upset group? Do the personality measures add any power to life change ratings in symptoms? What kind of symptoms and which personality measures? The questions addressed with these data could go on ad infinitum.

The findings of this study suggested that locus of control of the event may be an important factor in the rating and in whether or not personality influences the rating. A

study could be designed having subjects rate on a Likert scale the degree of control of the subject over the occurrence or non-occurrence of the event as well as rating the event. Analysis could then focus on where, in fact, subjects perceive the locus of control of events to be. It could also focus on differences in ratings between the groups of events generated by that scaling. If personality data were also collected from the subjects, then analysis could more directly address the issue of event group personality interaction in the generation of ratings.

In sum, this study has attempted to answer a number of questions about the role of personality in the perception of life change events as more or less upsetting. While it has answered a few questions, it has raised many more.

APPENDIX I

BACKGROUND INFORMATION

1. Sex: _____M _____F
2. Date of birth: ____/____/____
mo. date yr.
3. Race: _____Black, _____White, _____Other.
4. Years of school completed: ____12, ____13, ____14, ____15, ____16 +
5. Marital status: ____Single, ____Married, ____Divorced, ____Widowed
6. Father's job title: _____
7. Father's duties on the job _____

8. Father employed in ____private business, ____government,
____self-employed.
9. Mother's job title: _____
10. Mother's duties on the job _____

11. Mother employed in ____private business, ____government,
____self-employed.

APPENDIX II

COLLEGE-MODIFIED SOCIAL READJUSTMENT RATING SCALE

1. Being fired from work, or expelled from school.
2. Death of a close friend.
3. Minor violations of the law (traffic tickets, jay walking, disturbing the peace).
4. Brother or sister leaving home (marriage, attending college, etc.)
5. Loss of job by one of your parents.
6. Being pregnant and unmarried.
7. Major change in vocational plans.
8. Major change in number of family get-togethers (a lot more or a lot less than usual).
9. Divorce of parents.
10. Marital separation of parents.
11. Acquiring a visible deformity.
12. Becoming involved with drugs or alcohol.
13. Jail sentence of parent for 1 year or more.
14. Major change in social activities (clubs, dancing, movies, visiting, etc.)
15. Change in residence (moving to a new address).
16. Fathering an unwed pregnancy.
17. Death of a brother or sister.
18. Change in being accepted by your peers.
19. Discovery that you were an adopted child.
20. Marriage of a parent to a step-parent.
21. Birth of a brother or sister.
22. Your being put in jail or other institution.
23. Mother beginning to work.
24. Having a physical deformity from birth which is visible to others.
25. Death of a parent.
26. Getting married.
27. Pregnancy of wife (if married) or yourself (if you are a married woman).
28. Serious illness requiring hospitalization of a parent.
29. Jail sentence of a parent for 30 days or less.
30. Breaking up with a "steady" boyfriend or girlfriend.
31. Major change in parents' financial status.
32. Pregnancy in unwed teenage sister.
33. Moving to a new college or university.
34. Increase in number of arguments with parents.
35. Increase in number of arguments between parents.
36. Death of a grandparent.
37. Outstanding personal achievement.
38. Sexual problems or difficulties.
39. Serious illness requiring hospitalization of a brother or sister.
40. Change in father's occupation requiring increased absence from home.
41. Major change in your church activities (a lot more or a lot less than usual).
42. Addition of a third adult to family (grandparent, etc.)
43. Decrease in number of arguments with parents.
44. Decrease in number of arguments between parents.
45. Failure of a course in school.
46. Starting to work at a new job.

APPENDIX III

I-E SCALE

1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality.
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well-prepared student there is rarely, if ever, such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it.

13.
 - a. When I make plans, I am almost certain that I can make them work.
 - b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.
14.
 - a. There are certain people who are just no good.
 - b. There is some good in everybody.
15.
 - a. In my case, getting what I want has little or nothing to do with luck.
 - b. Many times we might just as well decide what to do by flipping a coin.
16.
 - a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
 - b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.
17.
 - a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
 - b. By taking an active part in political and social affairs, the people can control world events.
18.
 - a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
 - b. There really is no such thing as "luck".
19.
 - a. One should always be willing to admit mistakes.
 - b. It is usually best to cover up one's mistakes.
20.
 - a. It is hard to know whether or not a person really likes you.
 - b. How many friends you have depends upon how nice a person you are.
21.
 - a. In the long run, the bad things that happen to us are balanced by the good ones.
 - b. Most misfortunes are the result of lack of ability, ignorance, laziness, or, all three.
22.
 - a. With enough effort we can wipe out political corruption.
 - b. It is difficult for people to have much control over the things politicians do in office.
23.
 - a. Sometimes I can't understand how teachers arrive at the grades they give.
 - b. There is a direct connection between how hard I study and the grades I get.
24.
 - a. A good leader expects people to decide for themselves what they should do.
 - b. A good leader makes it clear to everybody what their jobs are.

- 25.
 - a. Many times I feel that I have little influence over the things that happen to me.
 - b. It is important for me to believe that chance or luck plays an important role in my life.
- 26.
 - a. People are lonely because they don't try to be friendly.
 - b. There's not much use in trying too hard to please people, if they like you, they like you.
- 27.
 - a. There is too much emphasis on athletics in high school.
 - b. Team sports are an excellent way to build character.
- 28.
 - a. What happens to me is my own doing.
 - b. Sometimes I feel that I don't have enough control over the direction my life is taking.
- 29.
 - a. Most of the time I can't understand why politicians behave the way they do.
 - b. In the long run, the people are responsible for bad government on a national as well as on a local level.

APPENDIX IV

R-S SCALE

1. I wake up fresh and rested most mornings.
2. My hands and feet are usually warm enough.
3. My daily life is full of things that keep me interested.
4. There seems to be a lump in my throat much of the time.
5. Once in a while I think of things too bad to talk about.
6. At times I have fits of laughing and crying that I cannot control.
7. I feel that it is certainly best to keep my mouth shut when I'm in trouble.
8. I find it hard to keep my mind on a task or job.
9. I seldom worry about my health.
10. I have had periods of days, weeks, or months when I couldn't take care of things because I couldn't "get going".
11. My sleep is fitful and disturbed.
12. Much of the time my head seems to hurt all over.
13. I am in just as good physical health as most of my friends.
14. I prefer to pass by school friends or people I know but have not seen for a long time, unless they speak to me first.
15. I am almost never bothered by pains over the heart or in my chest.
16. I am a good mixer.
17. I wish I could be as happy as others seem to be.
18. Most of the time I feel blue.
19. I am certainly lacking in self-confidence.
20. I usually feel that life is worthwhile.
21. It takes a lot of argument to convince most people of the truth.
22. I think most people would lie to get ahead.
23. I do many things which I regret afterwards (I regret things more or more often than others seem to do.)

24. I have very few quarrels with members of my family.
25. My hardest battles are with myself.
26. I have little or no trouble with my muscles twitching or jumping.
27. I don't seem to care what happens to me.
28. Much of the time I feel as if I have done something wrong or evil.
29. I am happy most of the time.
30. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.
31. Often I feel as if there were a tight band about my head.
32. I seem to be about as capable and smart as most others around me.
33. Most people will use somewhat unfair means to gain profit or an advantage rather than to lose it.
34. Often I can't understand why I have been so cross and grouchy.
35. I do not worry about catching diseases.
36. I commonly wonder what hidden reason another person may have for doing something nice for me.
37. Criticism or scolding hurts me terribly.
38. My conduct is largely controlled by the customs of those about me.
39. I certainly feel useless at times.
40. At times, I feel like picking a fist fight with someone.
41. I have often lost out on things because I couldn't make up my mind soon enough.
42. It makes me impatient to have people ask my advice or otherwise interrupt me when I am working on something important.
43. Most nights I go to sleep without thoughts or ideas bothering me.
44. I have had periods in which I carried on activities without knowing later what I had been doing.
45. I cry easily.
46. I have never felt better in my life than I do now.

47. I resent having anyone take me in so cleverly that I have had to admit that it was one on me.
48. I do not tire quickly.
49. I like to study and read about things that I am working at.
50. I like to know some important people because it makes me feel important.
51. It makes me uncomfortable to put on a stunt at a party even when others are doing the same sort of things.
52. I frequently have to fight against showing that I am bashful.
53. I seldom or never have dizzy spells.
54. My memory seems to be all right.
55. I am worried about sex matters.
56. I find it hard to make talk when I meet new people.
57. I am afraid of losing my mind.
58. I frequently notice my hand shakes when I try to do something.
59. I can read a long while without tiring my eyes.
60. I feel weak all over much of the time.
61. I have very few headaches.
62. Sometimes, when embarrassed, I break out in a sweat which annoys me greatly.
63. I have had no difficulty in keeping my balance in walking.
64. I wish I were not so shy.
65. I enjoy many different kinds of play and recreation.
66. In walking I am very careful to step over sidewalk cracks.
67. I frequently find myself worrying about something.
68. I hardly ever notice my heart pounding and I am seldom short of breath.
69. I get mad easily and then get over it soon.
70. I brood a great deal.

71. I have periods of such great restlessness that I cannot sit long in a chair.
72. I dream frequently about things that are best kept to myself.
73. I believe I am no more nervous than most others.
74. I have few or no pains.
75. I have difficulty in starting to do things.
76. It is safer to trust nobody.
77. Once a week or oftener I become very excited.
78. When in a group of people I have trouble thinking of the right things to talk about.
79. When I leave home I do not worry about whether the door is locked and the windows closed.
80. I have often felt that strangers were looking at me critically.
81. I drink an unusually large amount of water every day.
82. I am always disgusted with the law when a criminal is freed through the arguments of a smart lawyer.
83. I work under a great deal of tension.
84. I am likely not to speak to people until they speak to me.
85. Life is a strain for me much of the time.
86. In school I found it very hard to talk before the class.
87. Even when I am with people I feel lonely much of the time.
88. I think nearly anyone would tell a lie to keep out of trouble.
89. I am easily embarrassed.
90. I worry over money and business.
91. I easily become impatient with people.
92. I feel anxiety about something or someone almost all the time.
93. Sometimes I become so excited that I find it hard to get to sleep.

94. I forget right away what people say to me.
95. I usually have to stop and think before I act even in trifling matters.
96. Often I cross the street in order not to meet someone I see.
97. I often feel as if things are not real.
98. I have a habit of counting things that are not important such as bulbs on electric signs, and so forth.
99. I have strange and peculiar thoughts.
100. I have been afraid of things or people that I knew could not hurt me.
101. I have no dread of going into a room by myself where other people have already gathered and are talking.
102. I have more trouble concentrating than others seem to have.
103. I have several times given up doing a thing because I thought too little of my ability.
104. Bad words, often terrible, come into my mind and I cannot get rid of them.
105. Sometimes some unimportant thought will run through my mind and bother me for days.
106. Almost every day something happens to frighten me.
107. I am inclined to take things hard.
108. I am more sensitive than most other people.
109. At periods my mind seems to work more slowly than usual.
110. I very seldom have spells of the blues.
111. I wish I could get over worrying about things I have said that may have injured other people's feelings.
112. People often disappoint me.
113. I feel unable to tell anyone all about myself.
114. My plans have frequently seemed so full of difficulties that I have had to give them up.
115. Often, even though everything is going fine for me, I feel that I don't care about anything.

- 116. I have sometimes felt that difficulties were piling up so high that I could not overcome them.
- 117. I often think, "I wish I were a child again".
- 118. It makes me feel like a failure when I hear of the success of someone I know well.
- 119. I am apt to take disappointments so keenly that I can't put them out of my mind.
- 120. At times I think I am no good at all.
- 121. I worry quite a bit over possible misfortunes.
- 122. I am apt to pass up something I want to do because others feel that I am not going about it in the right way.
- 123. I have several times had a change of heart about my life work.
- 124. I have a daydream life about which I do not tell other people.
- 125. I have often felt guilty because I have pretended to feel more sorry about something than I really was.
- 126. I feel tired a good deal of the time.
- 127. I sometimes feel that I am about to go to pieces.

APPENDIX V

THE LEARNING STRATEGIES QUESTIONNAIRE

-
1. This describes me very well.
 2. This describes me moderately well.
 3. This does not describe me very well.
 4. This is not true of me at all.
 5. I am very inconsistent in this situation.
-

1. When I am penalized in an essay exam it is because I gave too general an answer without including enough facts and details.
2. When I am penalized in essay exams it is because I gave enough details but didn't tie them together with enough general principles.
3. When I am taking notes in class lectures, I put them in outline form.
4. When I am reading something that has in it many specifics (details, facts) that must be learned, I do it by copying down the specifics and memorizing them.
5. When I am taking notes in class lectures, I write down the content of the lecture in my own words.
6. When I write a paper, I start by having a good idea in my mind about what I am going to do, and then I write as the ideas develop.
7. When lecture material is too difficult for me to understand, I primarily try to get the facts and examples being presented.
8. When lecture material is too difficult for me to understand, I primarily try to get the principles being presented.
9. In classes where I have to remember details (formulas, dates, etc.) I learn best by memorizing the required detailed information.
10. When studying for an essay test, I concentrate on learning details-- facts, examples, etc.
11. When text material is too difficult for me to understand, I work at the difficult part until I can get in and then continue.
12. In reading an assignment, I skim the material to be covered.
13. When taking notes in class lectures, I take things down in order as they are given, without outlining.

-
1. This describes me very well.
 2. This describes me moderately well.
 3. This does not describe me very well.
 4. This is not true of me at all.
 5. I am very inconsistent in this situation.
-

14. If what I read has many specifics (details, facts) that must be learned, I memorize them alone rather than learning them within the context of the whole presentation.
15. When taking notes in class lectures, I use the teacher's own words and phrases as a record of the lecture.
16. I use different notetaking styles (or systems) in different courses.
17. In first reading an assignment, I go through it thoroughly, reading every paragraph.
18. I study the same way, no matter what the type of test.
19. An important part of my studying is analyzing and reflecting upon the material in my courses.
20. I try to memorize everything I feel will be tested on.
21. I try to find on my own the general idea of what is being presented.
22. I use my underlinings as a way to identify the specific facts which I feel are important.
23. I write out material that I feel I need to know for a test.
24. In studying for exams I incorporate my lecture notes and text materials together (instead of studying them separately).
25. I adjust my reading rate for different types of material.
26. I find it difficult to extract the general principles of material no matter what the academic area.
27. I mentally argue with the lecturer while listening to his presentation.
28. I take a devil-may-care attitude toward my studies.

-
1. This describes me very well.
 2. This describes me moderately well.
 3. This does not describe me very well.
 4. This is not true of me at all.
 5. I am very inconsistent in this situation.
-

29. I generally score higher on objective tests than essay tests.
30. In preparing for a test I organize material into broad areas of emphasis.
31. I memorize general points as well as specific facts.
32. After watching a classroom film, I am able to say to myself what the central theme of the film was.
33. I take very complete notes during class lectures.

For this next group of questions, please indicate to what extent you like to study or learn in the way described.

1. I far prefer learning this way.
 2. I generally like to learn this way.
 3. I don't like learning this way.
 4. I very much dislike learning this way.
-

34. Memorizing as much as possible.
35. Studying something that is challenging (although quite difficult)
36. Getting the principles and generalizations on my own rather than being told what they are.
37. Studying which requires learning such things as formulas, names, dates, etc.
38. Studying general concepts or ideas.
39. Being given all the facts first and then working from these to the general concept.
40. Being given the general concept first and then working the facts into this general concept.

41. DIRECTIONS: One theory of the way people learn suggests a continuum like the one represented below. At the ends of the continuum are people who "scan" (on the left) and people who "focus" (on the right).

Read carefully the description of people who "scan" and people who "focus" and determine where you belong on the continuum. Of course most people both "scan" and "focus", depending on the situation they are in. However, it is usually possible for a student to describe his typical way of doing things.

Please indicate where you feel you belong on the continuum by marking the appropriate number on your answer sheet.

A PERSON WHO SCANS ---

reads for general points/
and uses details only/
rarely to add information
as/needed; in listening
to a/lecture, concentrates
on the speaker's purpose
and main/points; takes
notes in outline/form
emphasizing topics;
makes/a conscious effort
to/understand the "broad
picture"./

A PERSON WHO FOCUSES ---

in reading looks for/
important details from/
which to get the general/
points; in listening to a/
lecture concentrates on/
learning most of everything/
being said; takes notes in/
order to remember details;/
makes a conscious effort to/
learn facts and their meaning.

1 2 3 4

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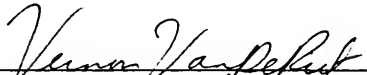
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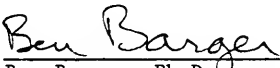
BIOGRAPHICAL SKETCH

Charles Hermann Morgan, Jr., was born on March 14, 1949, to Charles H. and Miriam Morgan in New York City. He grew up in New York; Brookfield, Connecticut; and Gastonia, North Carolina. He attended Kent School in Kent, Connecticut for high school and was graduated in June, 1967. While attending Columbia College of Columbia University in New York City, he met and married the former Ruth-Anne Hein. He received the Bachelor of Arts degree with a major in psychology in 1971. Immediately thereafter, he enrolled in graduate school at the New School for Social Research in New York, where he received the degree of Master of Arts with a major in Psychology in 1974. In 1973, his wife presented him with a happy, healthy, and beautiful daughter, Jennifer Susan. Following completion of the M.A., Mr. Morgan enrolled in the doctoral program in clinical psychology at the University of Florida in the fall of 1974. When he had completed his academic work, Mr. Morgan undertook a clinical psychology internship at Fairfield Hills Hospital in Newtown, Connecticut, where he is presently located.

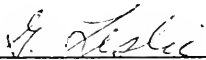
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Vernon D. Van De Riet, Ph.D., Chairman
Associate Professor of Clinical Psychology

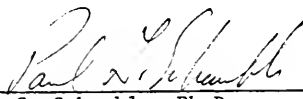
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This dissertation was submitted to the Graduate Faculty of the College of Health Related Professions and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

August, 1979


Dean, College of Health Related Professions

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